Annual Report to Management

RAILWAY AGE

JAN. 14, 1957 • THE INDUSTRY'S NEWSWEEKLY

1956 REVIEW and 1957 OUTLOOK

- How to Get More Net
- What RRs Will Spend in 1957
- Statistical Review of 1956
- Next in Communications
- RR Program Must Be Sold
- Changing Maintenance Pattern
- Monroe's 1956 Review
- Ways to Locomotive Economy
- Not Enough Freight Cars
- Automation in Signaling
- The Action Page

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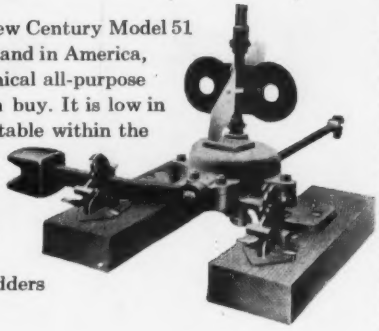

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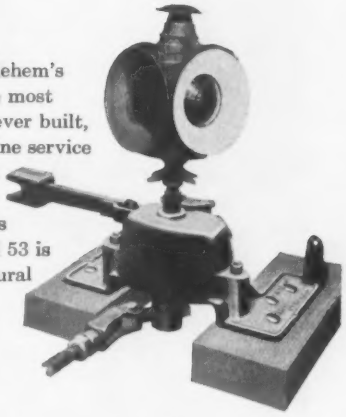
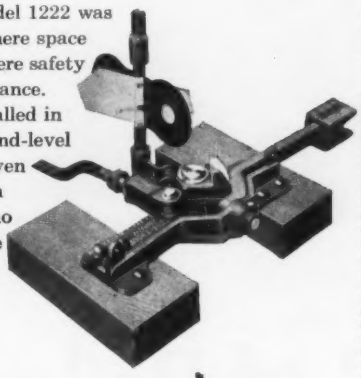


COMPACTNESS? Model 1222 was designed to be used where space is at a premium, or where safety calls for plenty of clearance. This stand can be installed in a flush-top box in ground-level station platforms, or even between the points of a switch where there is no clearance on either side of the track! Though small, it is strong, tough, and easy to operate.



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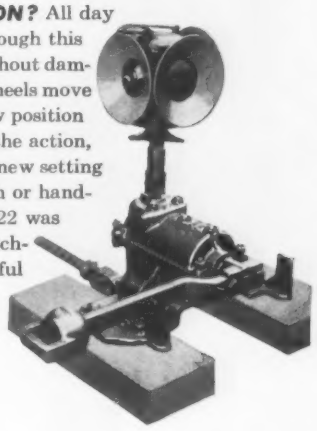

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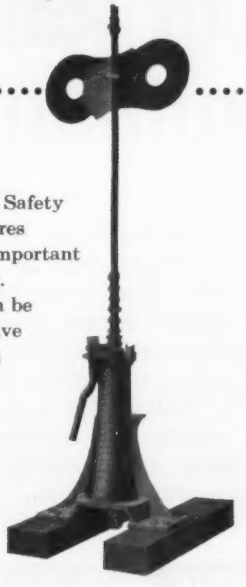

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Vol. 142, No. 2
January 14, 1957

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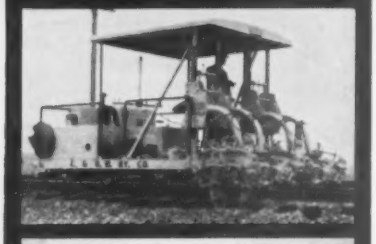

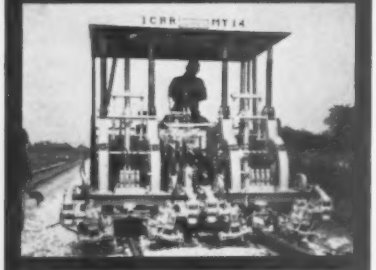

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Operating revenues, ten months	
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1955	8,374,496,681
Operating expenses, ten months	
1956	$6,731,852,843
1955	6,290,275,280
Taxes, ten months	
1956	$954,357,508
1955	923,822,927
Net railway operating income, ten months	
1956	$894,770,856
1955	947,187,510
Net income, estimated, ten months	
1956	$711,000,000
1955	749,000,000
Average price 20 railroad stocks	
January 7, 1957	97.33
January 10, 1956	95.61
Carloadings revenue freight	
Fifty-two weeks, 1956	37,841,969
Fifty-two weeks, 1955	37,636,031
Average daily freight car surplus	
Wk. ended Dec. 29, 1956	8,436
Wk. ended Dec. 31, 1955	5,715
Average daily freight car shortage	
Wk. ended Dec. 29, 1956	1,151
Wk. ended Dec. 31, 1955	1,498
Freight cars on order	
December 1, 1956	119,626
December 1, 1955	109,370
Freight cars delivered	
Eleven months, 1956	60,258
Eleven months, 1955	33,100
Average number railroad employees	
Mid-November 1956	1,027,799
Mid-November 1955	1,077,979

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The Year at a Glance

In a year of phenomenal general prosperity the railroads again were left behind. Earnings were down, as compared to 1955, and the rate of return on investment fell below four per cent.

Freight volume was at a high level, despite some slackening while the nationwide steel strike was in effect. Passenger traffic leveled off, after having declined for several years, but many carriers were greatly concerned over continuing large losses incurred in performing passenger service.

Rate and fare increases, while lagging behind cost increases that reflect higher wage scales and materials prices, were authorized with much less delay than in the past, and requests for authorization of further increases applying to both freight and passenger operations were pending at the year end.

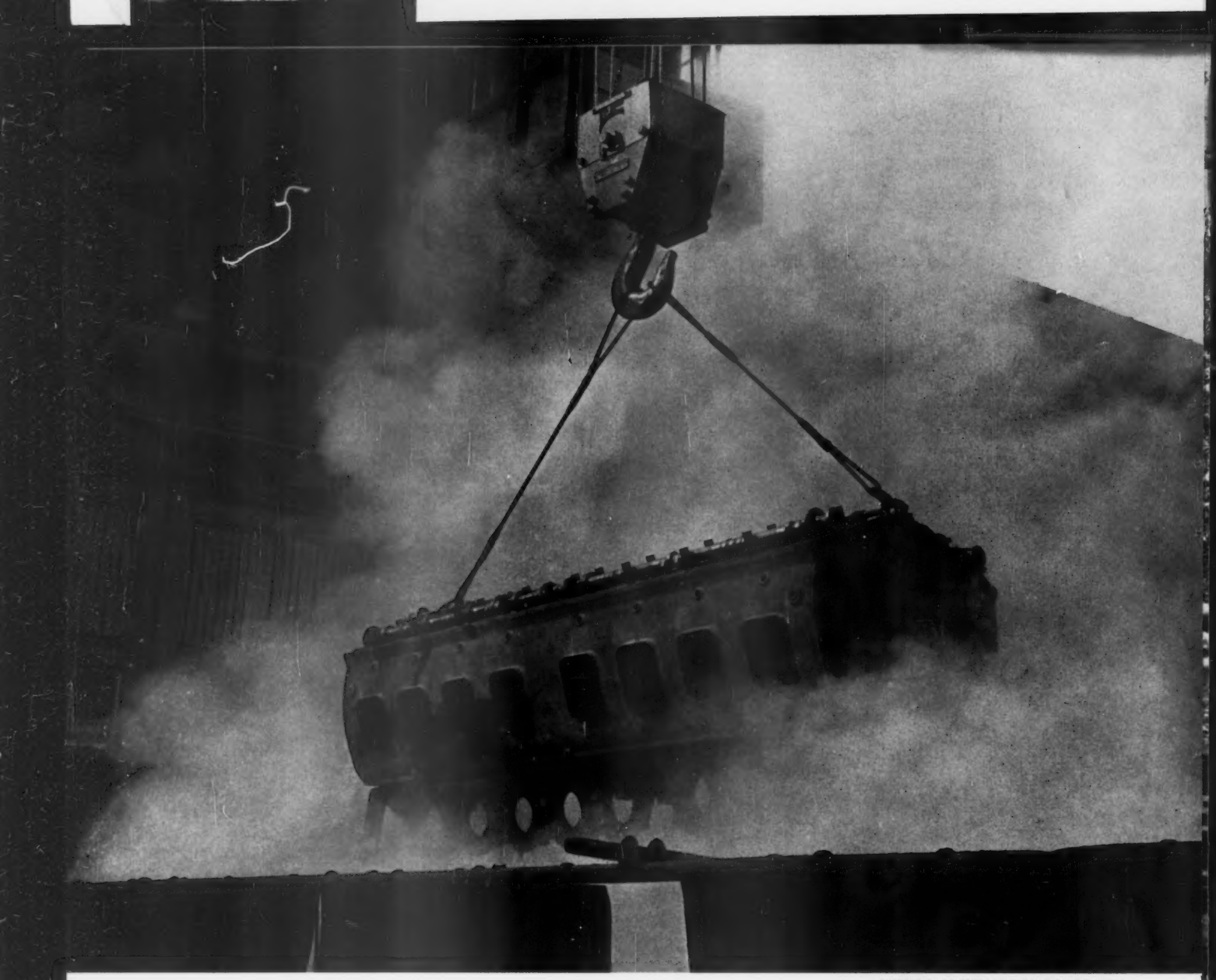
Technologically, the railroads continued in 1956 to make substantial progress, as shown by greater efficiency in operations.

Lightweight passenger trains in several versions were undergoing thorough service trials on different railroads. Customer reactions are reported to be generally favorable, and considerable operating economies are expected to show up as the tests continue.

Equipment orders did not match the 1955 total, but freight car and locomotive builders wound up the year with substantial backlogs. The scarcity of steel made it appear unlikely that deliveries of freight cars will catch up with needs for some time, so car shortages can be expected to continue, subject to the usual seasonal variations.

Legislation to give railroad managements greater latitude in meeting their problems did not materialize in 1956. Repeal of wartime transportation taxes has priority on the industry's legislative program for 1957.

Opportunities to make more net are not lacking, however, as brotherhood leaders, financial analysts and railroad executives point out with encouraging unanimity.



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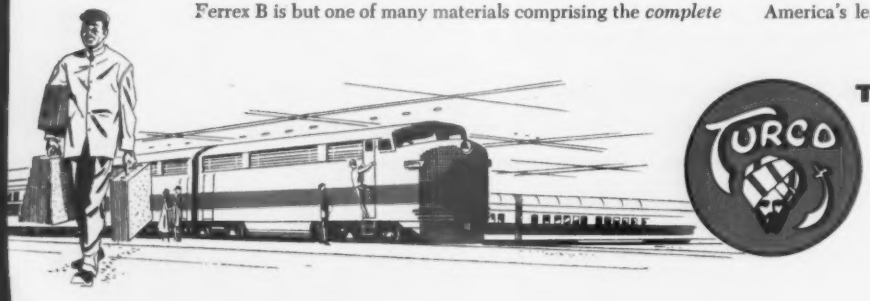

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How to Get More Net—1

RAILWAY AGE SAYS:

A Proper Base Comes First

A wag once suggested about his own company that "nothing's wrong with this outfit that a little more money wouldn't cure." The man had a point; and his idea is not without parallel to a lot of railroads here in the beginning of 1957.

Yet even a modest increase in the profit margin can be mighty elusive. Bled by inflation, battered by competition, corseted by regulation, the miracle is that railroads do as well as they do. Only one thing is constant and certain. The industry is earning far too few of today's deflated dollars. Net operating income actually has grown less than 4%, in terms of actual dollars, over 1916.

Railroad managements are much concerned over this depressed earnings situation. The pending requests of eastern and western railroads for higher freight rates stem in part from a desire "to improve the rate of return." An all-out drive is under way to obtain repeal of the bewhiskered excise taxes that date from World War II. Efforts to obtain regulatory relief via the legislative route are being continued.

Teamwork Is Essential

These undertakings are favorable moves in what is undeniably a complex task. The job to improve net is not quickly done. It runs in many directions simultaneously. Because it does, and because the undertaking differs from railroad to railroad, a major prerequisite to increasing net on any property is a management "team" equipped in talent and experience to deal with all the ramifications.

Creation of a "proper" internal organization can be as important as the creation of a "proper" external framework. Actually, many roads have already taken steps toward topgrading their staff and line organizations. The swift growth of comprehensive personnel programs in recent years, of stepped up recruitment efforts and supervisory training, are important aspects of this build-from-the-ground approach.

There are several more obvious and direct ways to increase profit margins quickly, to be sure. Simply put, these add up to increasing gross while holding or reducing expenses—to getting more business, or a greater share of existing business, for what is inherently the nation's high capacity transportation system. This need for more traffic, for more gross, was pointed up by the president of one western road when he said recently, "if we can get the gross, net will take care of itself." He could say that, for his particular property is well weather-stripped against revenue leakage. But to less fortunate roads no part of the gross-expense jigsaw is as good as it might be.

It is not difficult to list some important guideposts—well recognized ones they are, too—along the road to more net. Some are clearly long-term considerations which require industry-wide attention for ultimate solution. Among these can be listed the need for freedom to compete as befits conditions that exist today; the creation of informed public opinion sympathetic to railroad needs at all levels of government; and the endless struggle to obtain relief from antiquated and costly labor practices.

Spending for Earnings

The concern here though is with those short-term jobs which can be wrestled with on individual roads at the discretion of individual managements. These fall into the ill-defined area of "management prerogatives," requiring no special dispensations from regulatory authorities. They call only for the calculated risk-taking that is typical of all business.

Any railroad executive today should ask himself leading questions like these: Is our car fleet adequate in size, quality, design and upkeep? Are we researching our markets thoroughly, and using proven sales promotion techniques to get business? Will a better system of cost finding set the stage for more scientific pricing? Can costs be trimmed by further mechanization and modernization, and will investments in this direction now pay their way?

The search for increased net here and now must include, too, some careful examination of existing practices and services. Has everything possible been done to tune schedules and service to present customer needs? Has everything possible been done to find out just what those needs are? Have all unprofitable lines, or money-losing facilities, been analyzed to determine whether they can be made to pay?

Local pride in an unpatronized service is an expensive luxury for shareholders. Customers suffer, too, because any drain in one place affects improvements elsewhere.

Abandonment and retrenchment are clearly necessary at times, but certainly are no panacea. The question may well be asked, will new kinds of equipment, or innovations in service, trim costs and build business? The answers should be sought carefully. An illustration is provided by those roads which have been testing new concepts in passenger-train equipment for the past 18 months.

Railroads remain the nation's true common carriers. If they are to provide maximum usefulness they must be physically strong—modern both in facilities and outlook. But constant improvements take money, often a lot of money. In view of this need there is really only one critical managerial assignment today and that is to increase the profit figure. The job can be done, and the rewards most definitely warrant all-out effort.

How to Get More Net—2

EXECUTIVES FACE THE CHALLENGE:

Roddewig: *Let managers "manage"*
Perlman: *Base rates on costs*
Neff: *Get some laws changed*
Heineman: *Mechanize to cut costs*
Johnston: *Let railroads compete*
Macfarlane: *Save through modernization*
Frazer: *Get more freight revenue*
Stoddard: *Equalize chance to compete*
White: *Slacken rate regulation*
Tuohy: *Dare to "think modern"*

What the railroads call net income has another name: profit. Profit is the principal stuff of which more box cars and new classification yards—and regular dividends—are made. The goal of all railroad managers is to get more of it; the big question is . . . how?

Railway Age has taken that big question to the chief executives of 10 U.S. railroads: How can the railroads obtain more net income? What can they do, now and in the future, to strengthen their margin of profit?

By and large, what these 10 executives answer is not unusual. Their comments fall in familiar and generally predictable patterns. The same basic elements crop up again and again; only in the emphasis placed on these elements do the answers differ.

Yet these very differences in emphasis support the warning of Clair H. Roddewig, president of the Chicago & Eastern Illinois, and perhaps demonstrate why the age-old "railroad problem" is so hard to solve.

There is no panacea for the railroads' ills, Mr. Roddewig reminds; even though the individual railroad companies operate in greater unison than do members of any other industry, they can't all take the same pill and expect equal results because they don't all have the same disease.

From what the greater number of executives queried by Railway Age said, the railroads' "disease" could best be described as undernourishment due to overregulation. The proper prescription, then, would be to get the government to reduce the effect of regulation on the railroads' traffic—let the railroads choose their own diet, so to speak.

But somewhere in many of the answers—and predominant in a few—is the notion that the railroads' ailments could be to some extent self-inflicted; that a prescription reading "let's face it, we've got to work this out ourselves," would be more nearly the proper one.

Railroad spokesmen are understandably reluctant to assume that conditions which prevail on a particular property prevail on all railroads generally. And so what they might suggest as booster shots for the industry's profit margin must be judged with that in mind. A president whose railroad could live a long time on its current level of net obviously might see things differently than one who could stuff his annual net into the treasurer's hat.

RIGHT TO COMPETE IS FUNDAMENTAL

Railroaders in both of these categories emphasize the need for gaining the freedoms of competitive pricing recommended for all common carriers in the 1955 Advisory Committee report to President Eisenhower on federal transport policy.

Chapter and verse of the report crop up less frequently now, but the basic thinking of Commerce Secretary Weeks' committee — and of many committees before it—is there: The railroads must be given the right to go after traffic on equal terms with their competitors who use other forms of transport.

William White, president of the Delaware & Hudson, spells it out: "The only industry-wide palliative for increasing net income is more freedom from regulation as recommended by the Cabinet Committee."

But, reiterates Mr. Roddewig's warning: "The problem of increasing net income is different on different railroads. Those with a high percentage of passenger service have a problem entirely different from others. Also, those bearing high terminal costs have a problem peculiar to themselves."

Paul J. Neff, president of the recently reorganized Missouri Pacific, feels too that the most important thing is to get some laws changed. He sees a "growing public feeling" about the railroad situation which makes him hopeful that some day railroads will have the ability to meet competition where they find it.

Today the railroads can't compete when exempt and unregulated forms of transportation can skim off the desirable revenue-producing traffic and leave for the railroads only lower-rated, less-profitable freight, points out Union Pacific's President Arthur E. Stoddard.

Giving the railroads the "freedom to compete" and to establish reasonable rates will insure them the greater net necessary—which in turn would mean that they could provide increased service to the public and acquire needed equipment and facilities, Mr. Stoddard believes.

Wayne A. Johnston of the coal-hauling Illinois Central reminds that by their nature railroads are mass-movers. He thinks they must rely more on high volume than on high rates to operate successfully and profitably.

As the first step toward greater net, Mr. Johnson recommends prompt steps leading to the enactment of the rate-making provisions of the "Cabinet Committee bills." These proposals which were known in the past Congress as the "three shall-nots" would remove from the ICC's consideration of proposed rates the effect of the rates on the rates or traffic of competing forms of transport, or whether

the proposed rates were lower than necessary to meet the competition of other forms of transport.

Mr. Johnston wants to see the railroads permitted to quote rates which cover costs and don't discriminate unduly, but which attract the volume of traffic the railroads' inherent advantages call for.

DIFFERENT CONCEPT OF REGULATION

The heavy hand of political regulation gets its knuckles rapped by the presidents in other ways, too. Several of them stress the need for what Mr. White calls "a different concept of regulation in most states" regarding unprofitable passenger trains. Others, notably those whose tracks parallel navigable rivers, feel strongly the need for user charges on the railroads' competitors.

One officer—Donald V. Fraser of the Katy—lays emphasis on the need for greater revenue through higher rates. He and other top executives are quick to note the ability of other industries to set prices where they want to, and to raise them immediately, if they choose, when costs go up.

The railroads' entire rate structure —or more accurately the process by which it has been established—was assailed recently by Alfred E. Perlman, president of the New York Central, before the Toronto Railway Club (Railway Age, Dec. 10, 1956, p. 7). He declared "it is absolutely essential that the American railroad industry roll up its sleeves and make a scientific study of what it costs us to transport freight."

Only if the railroads "have the will and intelligence to obtain for our industry a rational pricing system can we be strong and efficient," Mr. Perlman believes. To him, a rational pricing system is one which is flexible, which takes into account cost of service, standby requirements, load factor, demand and volume.

Mr. Perlman deplores what he called the fact that "while all other utilities and other forms of transportation base their charges upon costs, plus an adequate return on investment, the railways have based their freight rates upon the theory of what the traffic will bear. This is carried down from the time the railroads had a monopoly on inland transportation."

Quite obviously, as Mr. Perlman points out, the railroads don't have a monopoly these days. There is even some feeling within the industry that no traffic is really "railbound" and immune to competitive diversion. Mr. Roddewig takes the position that since these conditions exist the public is entitled to no more of a "stake" in a railroads' existence, or in the services it performs, than it is in the existence and services of a manufacturing and merchandising enterprise.

Consequently Mr. Roddewig believes, railroad managers should have as much discretion to operate—or not operate—any particular service as other businessmen have to sell—or not sell—any particular product. He feels also that railroads should be allowed to sell their services at the prices they feel are best suited to the conditions of the moment.

Mr. Roddewig looks for greater net income first of all in the ultimate realization by regulatory authorities of the facts of "competitive life." He thinks that if the state commissions would allow railroads to discontinue passenger trains and agency stations which have no business because there is none to have, operating expenses could be reduced so much that rate increases being sought to improve the railroads' financial position might not be necessary.

Beyond that, he feels as others do that the railroads deserve the chance to adjust their rates to higher costs more rapidly than they now can—in the fashion of other industries.

UNIFIED TRANSPORT AN ANSWER?

Walter J. Tuohy of the Chesapeake & Ohio, a railroad which is measurably interested in air freight operations and novel piggyback methods (such as its convertible Railvan), has this to say:

"One avenue toward greater net for the railroads to explore is the concept of a unified transportation system embracing all forms of transportation—rail, highway, water and air. Certainly a system such as that, with a mode of transportation for every possible product, is one answer to the future of common-carrier transportation."

Mr. Tuohy calls special attention to one phrase in the Cabinet Committee report: "to utilize their economic capabilities." If the railroads are to do so, he says, they must "'individually and collectively (1) price their product in a competitive market; (2) dare to replace good equipment with better equipment, thus speeding up the obsolescence of existing methods; and (3) better utilize their inventory of equipment."

More than once among the 10 comments the idea crops up of transportation companies broadly conceived to include several—or all—modes of carriage. Mr. Johnston of the Illinois Central, for instance, counts the legal right to integrate transport forms second in importance only to that permitting competitive pricing.

Mr. Johnston would ask one other thing: that the government take steps to resolve what he calls the "dilemma of regulation" which finds closely regulated railroads attempting to compete with agencies not so closely regulated—or indeed not regulated at all.

If the government must regulate the railroads, he contends, it should regulate to the same extent all those who hold themselves out to perform public transportation. Of if the government chooses not to regulate these other agencies, it should deregulate the railroads to even the score.

Mr. Neff, whose Missouri Pacific runs parallel to barge lines for long distances (as does the Illinois Central), wants to see barge operators pay user charges on publicly provided facilities they now use free. He thinks, too, that agricultural exemptions should be "tightened up" so companies can't engage in what is actually public transportation as a sideline to their principal business.

Mr. Neff, of the ten, speaks most directly about the necessity of holding down operating costs by battling employee "featherbedding" practices. And he would note, as admittedly a small item but an important one, the opportunity to save money by eliminating a great many of what he calls unnecessary reports required by regulatory bodies.

Mr. Tuohy offers a suggestion directed at increasing the supply of available freight cars: He would like to see favorable action on pending requests for higher demurrage rates, since he thinks then freight cars would spend less time at shippers' unloading docks; and he thinks "adequate" per diem rates would give railroads an added economic incentive to buy more cars.

(Continued on page 124)

How to Get More Net—3

BROTHERHOOD LEADERS SAY:

Try New Approaches to Old Problems

Not only the unity of management and the backing of investors but also the cooperation and support of employees and their organizations is needed if American railroads are to overcome handicaps that limit their earnings. The views of representative railway brotherhood leaders were solicited and are here presented.

LEGISLATIVE RELIEF THE KEY

The overall future of railroad transportation is assured by our expanding national economy, but railroads as a private enterprise will not get their share of these gains so long as federal legislation chains free competition.

Most railroads are endeavoring to purchase as much new motive power and freight equipment as possible. However, is it enough and can it be fully utilized under present laws?

Management and labor should join in getting across to the public, particularly our legislators, the need for modernization of the government's transportation policy. If railroads can provide service for less money than a competitor, they should be permitted to do so.

I would suggest that less-than-carload freight be consolidated in car lots to central points 40 or 50 miles apart. It then could be handled by truck.

Passenger service also has a future, but instead of trying to compete with air lines for speed the railroads should provide and stress comfort and luxury in travel. Railroads having commuter service should modernize their equipment and provide better service instead of trying to eliminate it.

—Guy L. Brown, grand chief engineer, Brotherhood of Locomotive Engineers.

DYNAMIC NEW APPROACH URGED

On the surface, U. S. railroads can look forward to a good year in 1957. But underlying this is the problem of whether they will halt—or even slow down — their steady percentage-wise loss of position as the principal freight mover.

Legislative help seems unlikely to develop during 1957 in time to exert a strong influence. Thus, management will have to turn to other competitive tools. Service looks to be the most effective approach—and is well within management's control.

Railroad facilities are being rapidly improved, but it is not clear whether they will be used to attract more business or only to cut costs. Certainly, it has not been demonstrated that management has fully recognized that *availability* of modern equipment gives it an economic advantage which is more pertinent than *capacity*.

More fundamental planning is needed, but standing in the way is the lack of essential information. Research is urged to overcome this lack. Capably engineered projections of population trends, plant dispersal and industrial evolution are wanting.

Undr current circumstances, as railroad efficiency increases, rail employment declines. Until traffic volume starts rising, employment will keep going down. Declining employment, when continuous, corrodes employee morale. By its nature, the railroad industry is heavily dependent upon the performance of individual workers, especially in the operating crafts. Somewhere along the line, these conflicting elements may be expected to react adversely. This none of us wants.

There are few industries in which labor's help can be of greater value. But true cooperation has to be toward ends which are more comprehensive than mere cost-cutting, and it needs convincing evidence that a dynamic policy has been substituted for the static introversion which has characterized our industry.

—H. E. Gilbert, president, Brotherhood of Locomotive Firemen and Enginemen.

'PUBLIC BE DAMNED' WAYS SCORED

Asked if we believe the industry is doing everything it can to improve its competitive position and insure adequate earnings, my answer is "no."

First, because the railroad managers seem to be more interested in earnings than they do in service. Consequently, their treatment of the public is deplorable.

Many carriers seem to take the position of "the public be damned"—they give service when they like and do everything possible, apparently, to discourage passenger travel.

As to whether I believe railroad facilities are being improved fast enough to keep pace with demand, again my answer is "no."

I think the railroads should pay more attention to improving their facilities, both freight and passenger. With respect to passenger service, the railroads have adopted an attitude of not wanting this type of patronage. Much equipment is antiquated and service is poor. If the railroads would improve their passenger service it would not only assist in their alleged passenger deficit but at the same time would make friends with the public and, in turn, encourage more travel and shipping by rail rather than other forms of transportation.

Obviously, this comment is from a railway labor leader. To my personal knowledge, however, any suggestions such as I have made here have been made to railroad managers with no avail. I have always maintained that a more cooperative and friendly management—not only to labor, but to the

(Continued on page 123)

How to Get More Net—4

FINANCIAL ANALYSTS SAY:

More Latitude for Management

Accelerate Capital Improvements

Some railroads can stop loss of traffic by procuring sufficient cars both through purchase and by reducing the amount of bad-order equipment. Also, the per diem rate should be raised to keep the equipment rolling. Capital improvements that will provide a high return on investment should be accelerated, even if such a program requires borrowing. Operating heads of railroads should keep abreast of techniques—including mechanization—utilized by other railroads, both in this country and abroad. A little humility is a priceless possession.
—David A. Hill, Chicago.

More Piggyback and Lightweight Equipment

Higher net income for Class I railroads in 1957 can be achieved through increasing freight and passenger traffic revenues and reducing operating expenses.

Among major methods of raising gross revenues are: Aggressive solicitation of new industry; success in obtaining freight-rate and passenger-fare increases sufficient to obtain a satisfactory overall rate of return on invested capital; more intensive utilization of technical advances in transportation service, such as piggyback and lightweight passenger equipment; and increasing the available supply of freight cars through continuing and judicious purchases and reduction of the bad-order ratio to the irreducible minimum.

Effective means of expense control include: Mechanization of accounting and maintenance of way; installation of "push button" classification yards and centralized traffic control; consolidation or abandonment of unprofitable passenger trains; and sale of unproductive real estate.
—Edward S. Wilson, Hallgarten & Co., New York.

Cost Cutting Is Imperative

The railroad industry, like manufacturing, must learn to live with soaring costs of labor and materials. Unfortunately, it is not quite as easy for railroads to pass on price increases.

A program of cost cutting during 1957 might involve some of the following: Fuller utilization of diesels; increasing the car supply by reducing the bad-order ratio, rebuilding old cars to modern standards, and devising faster yarding and switching methods; further utilization of business machines on all levels; consolidating duplicate track and terminals; and trying to reduce the labor force on all levels.

Just as important, of course, will be the traffic department's task of holding on to existing business in the face of higher rates.
—Edgar T. Mead, Jr., G. C. Haas & Co., New York.

Regulation Must Be Equalized

An attitude must be fostered in the federal government whereby it will aid, not hamper, the railroad industry's efforts to compete fairly and effectively and to achieve its rightful place in the nation's transportation system. Toward this end the railroads should direct their main efforts.

Much more than a Treasury handout to the hard-pressed rails is necessary, however. Railroads must be given greater freedom in rate making and in elimination of unprofitable passenger and freight trackage. They must be given more understanding treatment in the matter of unfair taxation. Their requests for rate increases must be handled with the greatest possible speed so they are not completely overwhelmed by the increased operating costs they are seeking to offset. And, finally, they must be given greater latitude in the matter of consolidation of systems.
—Ernest Ach, Sutro & Co., Los Angeles.

Net Depends on Rate Increase

Unless railroads obtain favorable action on their request for an additional 15% increase in freight rates, net income in 1957 is not likely to match the $875 million indicated for 1956. The outlook for early action on the rate case is not too promising, since it will be necessary to give protestants plenty of time to voice their opposition.

Moreover, because of the importance and significance of the case, the ICC may well deliberate for a long time before handing down a decision. At best, a decision seems unlikely before late summer. If the railroads receive 10%, averaging 7% to 8% after holddowns and exceptions, net income then will take a distinct turn for the better.
—Arthur Jansen, W. E. Burnet & Co., New York.

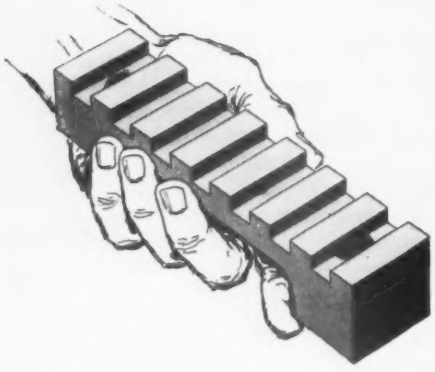
Outlook Good Over Next 10 Years

The answer to the question "What can railroads do to improve their net income?" is somewhat academic if limited to 1957. However, if considered in the light of a decade, further important economies, although not on the scale resulting from dieselization, can be attained by acquisition of new electronic accounting machines, mechanized equipment for maintenance-of-way operations, new signal systems (such as automatic gates, automatic interlockings and centralized traffic control—and above all, electronic hump yards.

Probably of greater importance is for railroads to get more freedom of action, in terms of regulation.
(Continued on page 123)

How R-S JOURNAL STOPS will further Reduce Solid Bearing Operating Costs

and pay for themselves in less than 3 years!



Tests have proved that this new device will greatly improve bearing performance and journal lubrication, will at least double bearing life, reduce wheel flange wear and make other significant savings in freight car operation.

STABILIZE the solid bearing assembly and you approach the maximum in bearing performance. You do just that with R-S Journal Stops. Best of all, they pay for themselves in less than 3 years. Here's how:

First, you reduce routine yard servicing and oiling requirements. Packing seldom needs adjustment, and you don't need oil so often either. (Other lubricators, pad or mechanical, will benefit, too). You cut car oilers' time in half, and inspectors' time by as much as 25%. When enough cars are Journal Stop equipped that could mean savings close to $18.00 per car per year.*

Second, all indications point to 3-year periods between periodic attention as required by Rule 66. That would cut current costs in half — save as much as $6.00 per car per year.

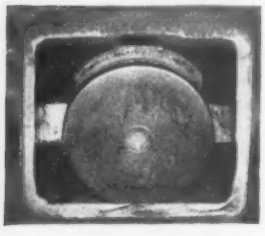
Third, and conservatively, you'll reduce road repair costs to a third of what they now are — possibly a great deal more. That means minimum savings of $6.00 per car per year.

Fourth, you'll cut bearing consumption in half — use less than 1½ bearings per car per year. In annual savings that will mean about $4.00 per car.

The above four items alone represent potential annual savings of $34.00 per car. Add to these the tremendous savings due to reduced wheel flange wear and a 3-year recovery estimate is probably conservative.

One private car company whose total savings are determined largely by billings that don't cover servicing costs, has already estimated recovery of total installation costs in less than 3 years. Operating roads will save even more. Write us today for full information. Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

**These and other estimated savings are based on unbiased studies of AAR solid journal bearing operating costs.*



Unretouched photo of the RS Journal Stop installation with conventional waste packing. **Other lubricators** are similarly "contained."

MAGNUS

Solid Bearings

MAGNUS METAL CORPORATION

Subsidiary of **NATIONAL LEAD COMPANY**

Claim Costs Won't Come Down

Despite steady improvement of safety records, railroad personal injury claims payments continue high—'Generous' juries, skullduggery tabbed as causes

Had not their safety records improved markedly through the last decade, American railroads might have paid more than $175 million last year in claims arising from injuries or deaths to employees, passengers and all others involved in rail accidents.

For, despite a reduction of some 45% in the *number* of average yearly injuries between 1941 and 1955, the average *expenditure* per year in connection with them has soared by about 94%.

If the rate of yearly reportable injuries to all persons had continued on the same level that prevailed in the 1941-1945 period, and had the climbing curve of costs gone on unabated, those costs might reasonably have been expected to be almost 85% higher than the approximately $95 million railroads are estimated to have paid in 1956.

Part of this situation no doubt may be attributed to the inflation of the last several years, but railroad claim men regard this as only a partial explanation.

More to the point, they are inclined to believe, is the increasing "generosity" of juries and the growth of "claim-consciousness" in the American public.

Bearing out the reports of improved-safety records on American railroads are these figures compiled by the General Claims Division, Association of American Railroads:

The division (using as its source statements to the ICC by the railroads), reports that in 1943 there was a total of 5,302 railroad deaths, including 1,089 employees. In 1955, there were only 2,821 deaths, including those of 284 employees on duty.

There were 59,957 non-fatal injuries reported in 1943, of which employees accounted for 45,685. In 1955, injuries totaled 27,678, with employees accounting for 18,290.

In 1943 railroads paid $50,845,831 in settlement of personal injury claims and suits, including medical, legal and administrative expenses. In 1945 the total had gone up to $73,331,142; by 1950 it was $82,983,452. The figure reached its peak to date in 1951: $101,587,394. The bill declined in each of the next four years: $98,020,-414 in 1952; $96,351,725 in 1953; $95,394,417 in 1954; and $94,981,-014 in 1955. However, preliminary figures indicate that payments in 1956 were higher than in 1955.

Breaking down the personal injury expenditures into railroad departments (in keeping with reports to the ICC), it is shown that the bulk of the costs is chargeable to transportation, as opposed to maintenance of way and structures and maintenance of equipment.

Railroads may be said to have two basic problems in their handling of all personal injury claims—from which, it is estimated, approximately 80% of the total railroad payments are made to employees. First of all, in any case, the railroad must determine the liability involved, and, secondly, it must make its evaluation of the claim or suit.

K. A. Carney, executive vice-chairman of the AAR's General Claims Division, states, however, that "the determination of liability in practically all employee cases which are subject to the Federal Employers' Liability Act, is no longer a substantial problem. While the act itself provides that there shall be no recovery if the railroad company is not guilty of negligence, it is extremely difficult to keep out of the vast majority of the cases some allegations by the plaintiff . . ." which would somehow implicate the railroad.

"Practically all cases are subject to jury determination," Mr. Carney continues, thus making "the determination

(Continued on page 18)

THIS AGENCY HELPS SOME RRs COMBAT EXCESSIVE CLAIMS

"The case of the missing witness" is one which confronts railroads frequently, especially in these days of overloaded court calendars when cases may be docketed for months and years before proceeding to trial.

Railroads just aren't geared to keeping tabs on witnesses who might rebut damaging testimony or who could throw real light on the question of liability and negligence in personal injury claims cases.

There is, however, an organization geared to do exactly the sort of things that railroads haven't the resources or trained manpower to handle in connection with their claims cases.

The National Railways Security Bureau of New York City, sort of a free-lance claims agency for the railroads, is set up to keep track of witnesses, or locate them initially, with a staff composed of personnel trained in legal, insurance and investigative work. It was organized in 1949, being an outgrowth of another organization doing similar work in the marine field and now concentrating on claims investigations for some 15 or more railroads. Offices have been established in Chicago, Cleveland, Pittsburgh, Detroit, Albany and Riverhead, N.Y., with resident agents located in scattered smaller communities coast to coast.

The agency is headed by Horace W. Schmall, former OSS agent with a long career in insurance and claims work.

HOW IT WORKS—An investigator, summoned from the Riverhead office, say, to check a highway crossing accident on the Long Island, will seek to round up reliable witnesses whose testimony would establish an accurate picture of what happened. Claims agents of the railroad might not be able to reach the scene until long after such witnesses had disappeared, but the investigator, called on quickly, develops a report which shows clearly where the liability is and permits the railroad's claims people to proceed with a factual background.

In the cases of falsified or exaggerated disability, investigators can be assigned to uncover evidence that would refute such claims in court. The agency, making use of special recording and photographic apparatus, employing agents skilled in their use, is prepared for more extensive investigations than most railroads or general detective agencies can perform.

Noting that only a minute fraction of claims filed against railroads involve chicanery, Mr. Schmall nevertheless declares that "claims exaggeration and claims fraud have been nurtured into an organized racket which is being sponsored by 'runners,' by irresponsible attorneys and by dishonest doctors. It's not only railroads that are suffering, but the general public as well, because the costs of drummed-up claims are passed on."

remember her?

You most likely saw her. She appeared in our advertisements in magazines from coast to coast. We called her a "born train traveler!"

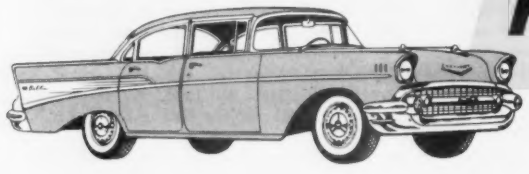
We said her folks avoid the endless miles of highway travel by leaving their family car at home, taking a fast and comfortable train, then renting a bright, new Powerglide Chevrolet Bel Air or other fine Hertz car at their destination.

That's The Hertz Idea. Now—what's it mean for you?

In two words, *more passengers.* By encouraging people to go by train, we are of course promoting the idea of renting a car. And once your passengers have tried the Hertz Rail-Auto Travel Plan, they'll use it again and again. That means *repeat business* for both of us!

We also offer your ticket agents a 10% commission on the total rental fee of any Hertz car they reserve for a railroad passenger. And—with Hertz counters or direct "Call a Car" phones in terminals, we can work even more closely.

That's why we say—let's work together. Mention the idea of renting a car in your advertising. For free promotional materials write: Hertz Rent A Car, 218 South Wabash Avenue, Chicago 4, Illinois.



More people by far...use

HERTZ

Rent a car

MARKET OUTLOOK THIS WEEK

Freight Car Loadings

Loadings of revenue freight for the week ended January 5 were not available as this issue of Railway Age went to press.

Loadings of revenue freight for the week ended December 29 totaled 487,546 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, December 29

District	1956	1955	1954
Eastern	85,076	98,222	94,998
Alleghany	102,499	117,302	102,573
Pocahontas	31,428	42,405	42,679
Southern	79,321	102,831	95,026
Northwestern .	58,548	62,015	59,323
Central Western	91,372	94,543	91,454
Southwestern .	39,302	46,094	43,333
Total Western Districts	189,222	202,652	194,110
Total All Roads	487,546	570,412	529,386
Commodities:			
Grain and grain products	40,179	37,213	36,667
Livestock	4,404	5,834	5,688
Coal	79,188	123,806	108,146
Coke	12,176	14,157	9,364
Forest Products	24,159	30,988	29,474
Ore	18,990	15,122	14,429
Merchandise l.c.l.	40,713	46,073	52,022
Miscellaneous .	267,737	297,219	273,596
December 29 .	487,546	570,412	529,386
December 22 .	698,389	667,479	561,195
December 15 .	716,652	709,132	641,879
December 8 ..	737,757	721,518	653,531
December 1 ..	752,150	723,786	661,777
Cumulative total, 52 weeks ..	37,841,969	37,636,031	33,914,953

IN CANADA.—Carloadings for the seven-day period ended December 14 totaled 76,512 cars, compared with 79,479 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
December 14, 1956	76,512	34,186
December 14, 1955	76,392	34,848
Cumulative Totals:		
December 14, 1956	4,250,335	1,667,896
December 14, 1955	3,909,808	1,572,633

New Equipment

FREIGHT-TRAIN CARS

► *Northern Pacific.*—Plans to rebuild 200 box cars into double-deck stock cars at its Brainerd, Minn., shops; estimated cost $720,000; delivery expected about third quarter 1957.

PASSENGER-TRAIN CARS

► *Budd Expects 'Important' Orders This Year.*—"Interest on the part of our railroad customers in the purchase of new equipment is more intense right now than it has been in years," says Edward G. Budd, Jr., president of the Budd Company, "and it is reasonable to expect that important orders will be placed during 1957."

SPECIAL

► *ACF Producing 800 Trailer Hitches.*—Berwick, Pa., plant of ACF Industries has 800 of company's new retractable trailer hitches in production, with 400 earmarked for Trailer Train Company; three railroads also placed orders recently for the new trailer-on-flat-car tie-down device (Railway Age, Dec. 24, 1956, p. 9).

MARINE

► *New York Dock.*—Ordered two 3-track carfloats, Bethlehem Steel Corp.'s Staten Island, N. Y., yard; each float will measure 290 ft by 40 ft by 10 ft 9 in.

New Facilities

► *Delaware & Hudson.*—Ordered equipment from General Railway Signal Company for installation of 42.3 road miles of centralized traffic control between Afton, N. Y., and West Carbondale, Pa.

► *Great Northern.*—Ordered equipment from General Railway Signal Company for installation of remote control at MW Junction, Minn., to be controlled from Lyndale Junction, and for centralized traffic control between Brownsville, B. C., and Endot.

► *Illinois Central.*—Ordered from Union Switch & Signal-Division of Westinghouse Air Brake Company 20 sets of continuous cab signal and automatic train control equipment to be installed on diesel-electric locomotives.

► *Long Island.*—Ordered from Union Switch & Signal-Division of Westinghouse Air Brake Company equipment to install reverse signaling on two tracks of main line between "Hall" interlocking at Jamaica, N. Y., and "Divide" interlocking at Hicksville, approximately 15 mi.; construction is to extend over two years; installation will supplement recent changes made at "Jay" and "Hall" interlockings to expedite commuter service during morning and evening rush hours.

► *North Western.*—Plans to spend $4.3 million in 1957 for auto-

(Continued on next page)

a RAILWAY AGE workbook page

MARKET OUTLOOK (continued)

matic grade crossing installations and expects to save thereby $2 million in wages.

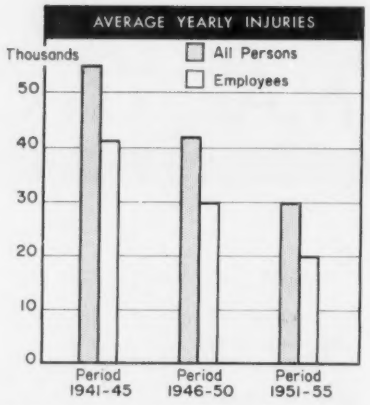
► *Pennsylvania.*—Will spend over $1,000,000 to streamline transportation operations supporting its ore unloading facilities on Delaware river at Greenwich Point, Philadelphia; project, which anticipates steady increase in foreign ore tonnage through Port of Philadelphia, involves, among other things, construction of more than four miles of new track and of modern car repair shop to make extensive repairs to gondola and hopper cars assigned to ore traffic.

► *Spokane, Portland & Seattle.*—Ordered equipment from General Railway Signal Company for installation of all-relay interlocking at Columbia River drawbridge, Wishram, Wash.

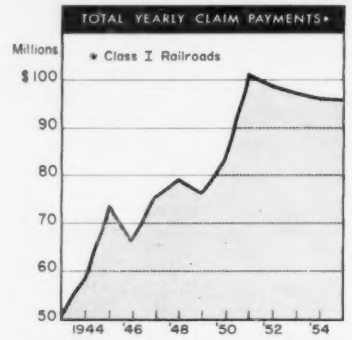
► *Texas & Pacific.*—Ordered equipment from General Railway Signal Company for installation of 62.8 mi of centralized traffic control between Ft. Worth, Tex. (Lancaster Yard) and Judd.

► *U.S. Steel Corporation.*—Placed order with Union Switch & Signal-Division of Westinghouse Air Brake Company covering materials and labor for installing electro-pneumatic car retarders and remotely controlled switches at ore sintering plant in Saxonburg, Pa.; car movement through retarders will be automatically governed by Velac speed control system, and switch position will be selected from desk-type retarder and switch control unit.

► *Venezuela State Railway.*—Westinghouse Air Brake, S.A., subsidiary of Westinghouse Air Brake Company, has contracted with this railroad to erect complete a centralized traffic control installation between Puerto Caballo and Barquisimeto; under sub-contract, Union Switch & Signal-Division of WAB will furnish equipment, materials and engineering for the signaling facilities; switches and signals over the approximately 107 miles of railroad will be controlled and indicated at 15-ft Style C unit lever control machine at Barquisimeto.



DOWN have gone personal injuries on railroads since 1941.



UPWARD have gone claims expenditures during same period.

(Continued from page 15)
of damages" the greatest problem in employee cases.

Usual procedure on many railroads in handling employee injury cases is similar to that of the Long Island.

Harold M. Cooke, general claim agent of the LI, says the first step in any case is to make certain the person injured is given proper medical care, whether in the nature of "first aid" or actual hospitalization. The railroad, he says, continues to "control" the medical treatment, paying all medical costs with the thought uppermost that the employee should receive the best possible care. The railroad prefers to deal directly with the individual and his family, Mr. Cooke reports, hoping to arrange a satisfactory settlement to account for pain and suffering and varying degrees of disability, in addition to medical costs.

However, Mr. Cooke states, whenever the railroad is advised that the case is being taken into litigation, its direct negotiations with the employee cease, and, while medical treatment continues, the relationship is modified from that of employer-employee to one of defendant-plaintiff.

Complicating the negotiation of settlements, according to Mr. Carney, is the increase in solicitation of claims cases by a relatively small number of attorneys in the various metropolitan centers of the country, some reportedly working with labor groups. So serious is this development considered that in 1955 it prompted the AAR, through Mr. Carney as director of the claims research bureau of the claims division, to file with the American College of Surgeons a brochure setting forth and assailing the collusion of a small minority of lawyers and physicians engaged in "ambulance chasing" and "professional witness" practices.

"While it is extremely difficult to estimate the cost to the industry brought about by this practice," Mr. Carney said of solicitation of claims cases, "informed claims men have estimated it to be in the neighborhood of $25 to $40 million a year. This estimate is based upon the probable difference between the actual value of the claims and suits with the inflated values brought about by the aggravation and distortion of the true facts, coupled with the additional expense saddled upon the industry through the need of making additional investigations, employing counsel, and other legal and administrative expense."

The claims research bureau was established in mid-1953 largely to evaluate the factors producing what were felt to be the excessive costs throughout the industry of handling personal injuries claims. However, a guiding rule in the activities of the bureau is that in all its attempts to uncover and reduce any corrupt or unethical practices contributing to soaring claims costs, it will not interfere in the payment of equitable damages to all claimants.

Much of the work of the bureau, Mr. Carney reports, is made available to the National Association of Railroad Trial Counsel which was organized in January 1955.

Actually, probably more than 95% of personal injury cases involving railroads are settled without litigation,
(Continued on page 130)

ASSOCIATION
OF AMERICAN
RAILROADS

Rx

Prescription

Must be of material to specification

Must be cast and fitted to close tolerances

Must have complete interchangeability of all parts

Must be sold at a reasonable price

NATIONAL
MALLEABLE AND STEEL
CASTINGS COMPANY
CLEVELAND 6, OHIO

A standard coupler was needed

Small freight cars or large, small locomotives or mighty, all would be useless without some way to join them together; thus, we find the history of the present day automatic coupler most interesting. Many years have passed since the link and pin, the Miller Hook and the first coupler of Eli Janney.

So frightful were the accidents of coupling and uncoupling with the old link and pin method that in 1893 Congress passed the Safety Appliance Act, which made it mandatory that after January 1, 1898, all cars used in interstate commerce must be equipped with couplers which would couple automatically on impact, and uncouple without a man stepping between the cars.

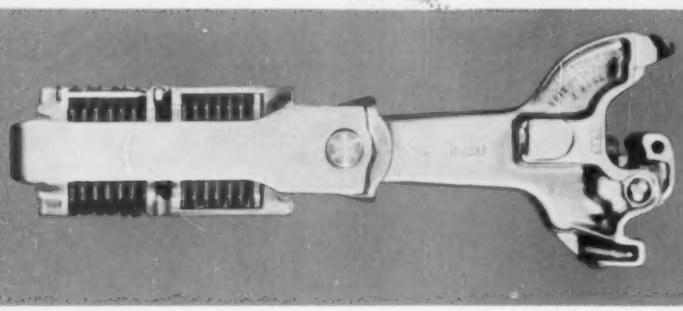
While the federal statute saved countless limbs and lives, yet it posed for the railroads a tremendous problem, in that soon there were over 100 different types of couplers, knuckles, locks, and parts.

Finally, in 1916, the Type "D" Coupler was adopted as standard for railroads of the United States, Canada and Mexico. With the adoption of a standard coupler it soon became evident that a set of specifications would be necessary to control material, tolerances and so forth. In 1918, the Association of American Railroads set up the first specifications on the manufacture and inspection of couplers.

A comprehensive inspection and gauging program, to assure the railroads the highest quality couplers, is conducted by the coupler manufacturers in accordance with the A.A.R. specifications. Also, the coupler manufacturers periodically engage jointly in an extensive program consisting of complete inspection, gauging, interchange and testing of "E", "F" and "H" couplers.

These A.A.R. specifications, revised and expanded from time to time, require a total of 133 gauges for the three couplers — "E", "F" and "H" — covering 563 gauging points.

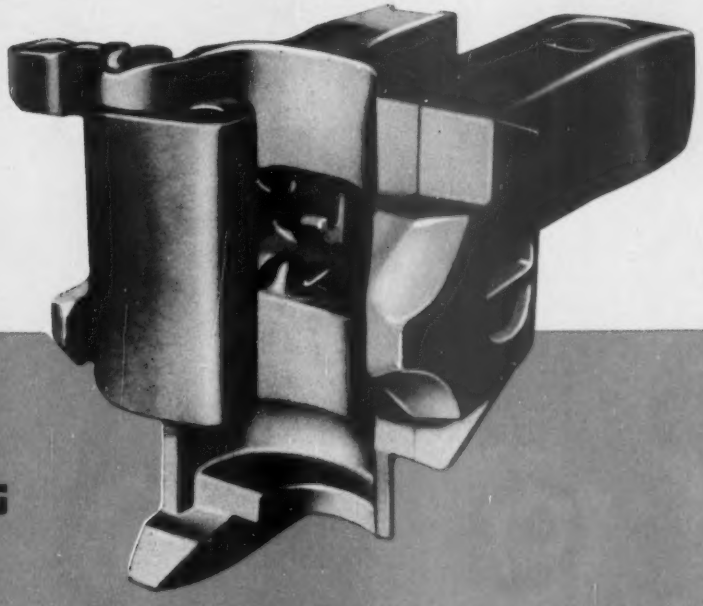
National is proud to have played, and to continue to play, an important part in the development of modern railroad couplers, and will continue to more than follow the inspection and gauging specifications set down by the Association of American Railroads.



NATIONAL DRAW GEAR ASSEMBLY

with National MF-400 Rubber-Cushioned Draft Gear

50 GAUGES
214 GAUGING POINTS



TYPE "F" INTERLOCKING COUPLER

The Type "F" coupler reduces the free slack between knuckles to about 50 per cent of that in the "E". It is also stronger than the type "E" and has interlocking wings for alignment. Another safety factor is the centrally located shelf on the lower front face which serves to support a conventional type coupler in event of a pull out.

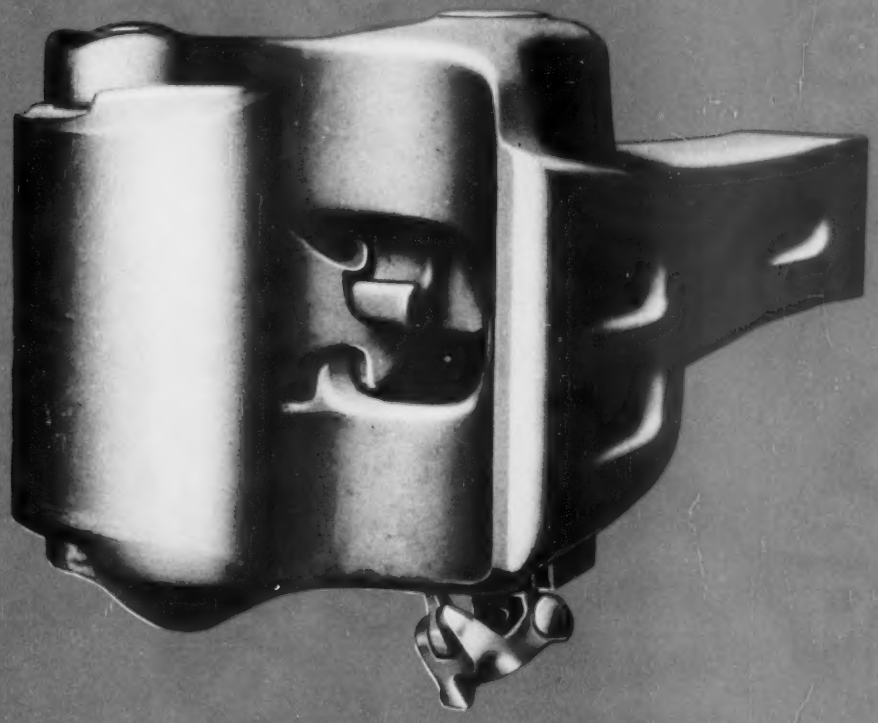
National, with over 65 years experience in coupler design and manufacture, contributed heavily to the development of the Type "F" coupler. This coupler was designed for freight service at the request of the railroads after the Type "H" Tightlock coupler proved so successful in passenger service.

STANDARD "E" COUPLER

Illustrated above are the 47 gauges used on the "E" coupler. Shown on this page are two of the numerous gauging operations which all National "E" couplers must pass before shipment to railroads.

47
GAUGES

182
GAUGING POINTS



The A.A.R. Standard Type E-60 coupler, proud successor to the Type "D" coupler, became standard in 1932. It is made of Grade B steel with high tensile steel knuckle and lock. A set of manufacturing gauges for this type of coupler costs approximately $14,000. with several sets required for quantity production (A set of master gauges required for making and checking the manufacturing gauges costs $12,000.). This type of coupler is also produced in high tensile steel.

The high tensile steel knuckle is purposely designed to be somewhat weaker than the body of the coupler or attachments. In other words, it is the "safety valve" used to protect the more expensive and less readily replaceable parts of the draft system.

RAILWAY DIVISION SALES
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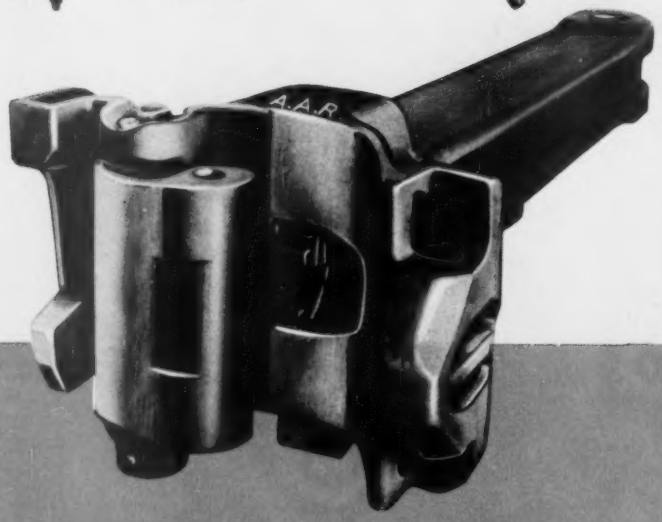
NATIONAL MALLEABLE and STEEL CASTINGS COMPANY of CANADA, Ltd. Toronto 1, Ontario

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY



TYPE "H" TIGHTLOCK COUPLER

36 GAUGES

167 GAUGING POINTS

10 MACHINING OPERATIONS TO CLOSE TOLERANCES

Introduced to the railroads in 1936, the Tightlock coupler for passenger car service quickly proved itself to be one of the greatest safety factors ever used by the railroads. In addition, the elimination of free slack between the knuckles made for greater passenger comfort than was heretofore possible.

National is proud to have been the largest contributor to the development of this coupler.

to Stop weeds...

Borate weed killers are proving best for 'roads from every standpoint...*efficiency, safety, economy, conveniency, easy application.*

Pacific Coast Borax Company pioneered the use of borates for maximum control of vegetation. Continued research has developed a group of borate herbicides which are now effectively meeting every phase of Railroad weed control. Today most 'roads are using our weed killers, in preference to all others, for the year-'round maintenance of weed-free conditions about trestles, tie piles, yards, signals, switches and along the rights-of-way.

You will want to know how these herbicides can benefit you; a note to the office nearest you will bring full information. Better yet, ask for a personal discussion about your weed problems, with no obligation. Our sales force, technically trained, is well qualified to give you the most practical solution.

United States Borax & Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION

MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS®

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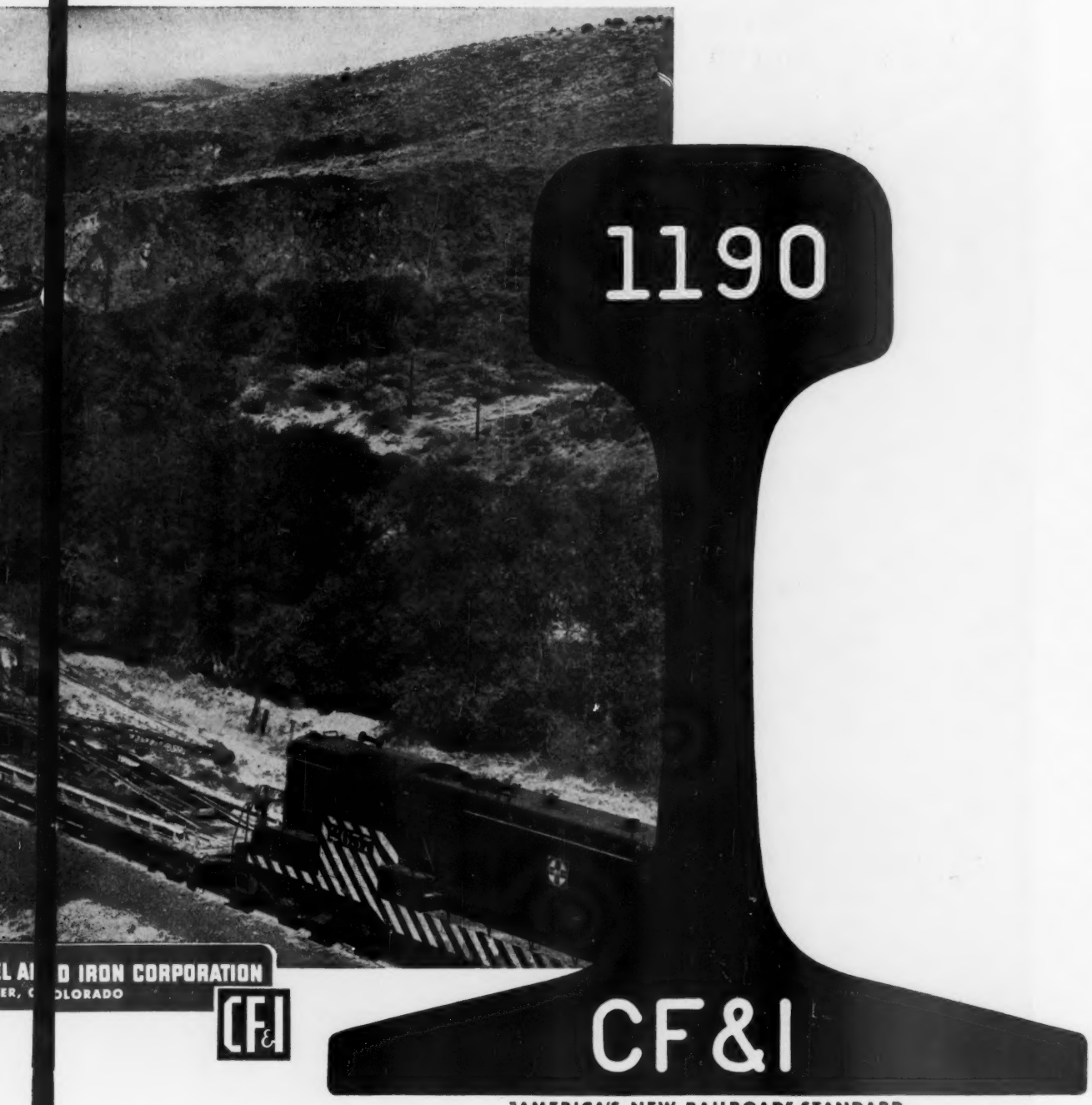
DENVER, COLORADO

"AMERICA'S NEW RAILROAD" STANDARD

engineering excellence...
sets the pace

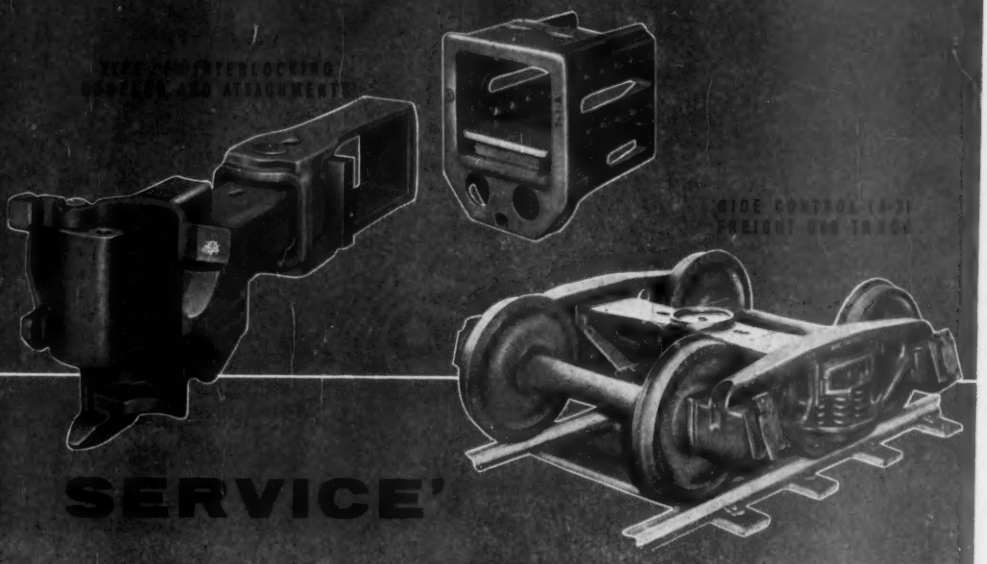


D IRON CORPORATION
OLORADO

CF&I

"AMERICA'S NEW RAILROAD" STANDARD

SINCE 1902 .
TYPE "E" RIGID SHANK COUPLER & YOKE
'DEPENDABILITY
BOLSTER CENTER FILLER
..a time-
Buckeye
for
TYPE "E" SWIVEL SHANK COUPLER & YOKE
TYPE "H" TIGHTLOCK COUPLER AND ATTACHMENTS
BUCKEYE C-R
C-R (CUSHION-RIDE) PACKAGE UNIT
BUCKEYE EIGHT-WHEEL TRUCK

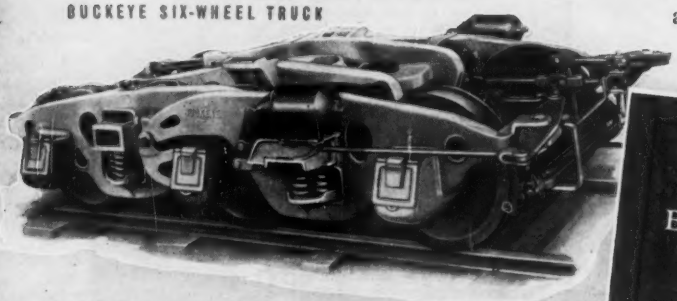


IN SERVICE'

proven feature of Steel Castings Railway Equipment

BUCKEYE C-R (CUSHION-RIDE) FREIGHT CAR TRUCK

BUCKEYE SIX-WHEEL TRUCK



If your future designs or your immediate programs call for the manufacture of miscellaneous cast steel parts, Buckeye is at your service.

A diversified range of carbon and alloy cast steels offers you a complete selection.

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Assures Safe Shipping of Perishables

Car building engineers have long recognized that Streamlite HAIRINSUL is the most efficient insulation under all operating conditions. A half century of successful use is proof enough that service conditions never retard its high insulating efficiency.

Not only is Streamlite HAIRINSUL a one-time investment; it actually outlives the life of the car and can be salvaged in perfect condition for use in new cars.

AMERICAN HAIR & FELT COMPANY
Merchandise Mart • Chicago, Illinois

SIX MAJOR REASONS WHY LEADING REFRIGERATOR CAR LINES SPECIFY *Streamlite HAIRINSUL*

1. **LOW CONDUCTIVITY.** Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.
2. **LIGHT WEIGHT.** Advanced processing methods reduce weight of Streamlite Hairinsul by 40%.
3. **PERMANENT.** Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.
4. **EASY TO INSTALL.** Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.
5. **COMPLETE RANGE.** Streamlite Hairinsul is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other specified coverings are available.
6. **HIGH SALVAGE VALUE.** The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED

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TRAFFIC MASTER SYSTEM

Every one of these advances in the signaling art was developed by the General Railway Signal Company — your partner in railway progress.

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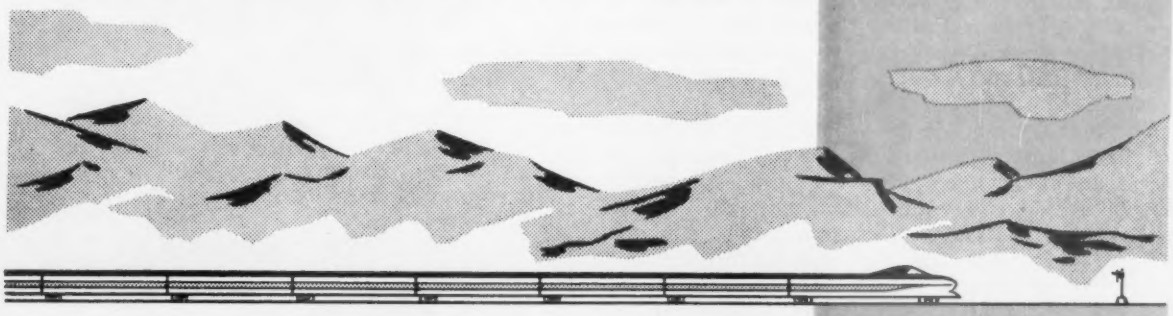

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GEARED TO PROGRESS

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2864

A Message to Management...

For longest car life at lowest annual cost

21 years service without major repairs proves the economic soundness of USS COR-TEN Steel construction

Take a look at this youthful "old-timer." It dramatically illustrates USS COR-TEN Steel's ability to prolong car life and reduce maintenance costs.

Built by the Baltimore and Ohio in 1935, this 40-ton experimental covered-wagon-top box car weighs only 34,000 lb.—is one of the lightest cars of its type ever constructed. Its side and roof panels of 1/32" corrugated COR-TEN Steel and ends of 1/16" COR-TEN Steel are in general only one-third the thickness of conventional AAR design.

Yet these very light COR-TEN Steel body sheets have been in use for 21 years and have required only moderate repairs. Recent inspection shows them still fit for several additional years of service before major repairs will be required.

When you consider that in the type of service encountered by B & O cars the life of box car sheets is about 20 years, with heavy repairs being required after about 10 years of service, the performance of COR-TEN Steel in car Number 367100 can well be called "excellent service"—especially so in view of the fact that the COR-TEN Steel sheets are up to *two-thirds lighter* than AAR standards.

Not in this car alone, but in the more than 225,000 freight cars that have been built with this superior high-strength low-alloy steel, COR-TEN's ability to better resist atmospheric corrosion and mechanical damage has been amply demonstrated.

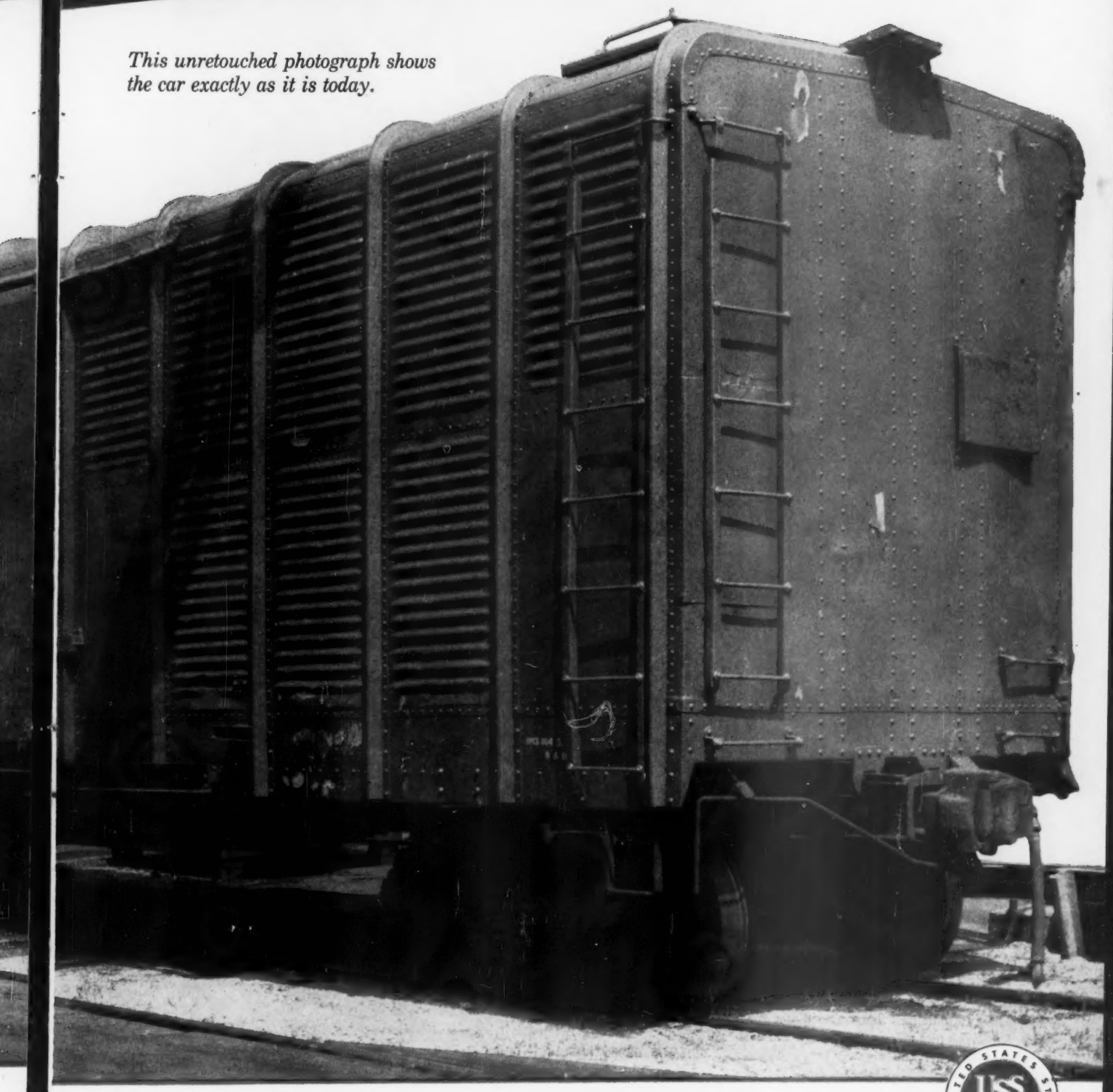
Although these cars are of various types—box cars, gondolas, hopper cars, refrigerator cars, etc.—and operate under widely different service conditions, records show that they consistently stand up better and require less maintenance than similar equipment built with less efficient steels. To obtain the same kind of service, specify USS COR-TEN Steel for your next cars. Get the facts about USS COR-TEN Steel. We'll be glad to show you how this tough, strong, corrosion-resisting steel will pay off for you.

See "THE UNITED STATES STEEL HOUR" — Televised alternate weeks — Consult your newspaper for time and station.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

specify construction with USS COR-TEN Steel

This unretouched photograph shows the car exactly as it is today.

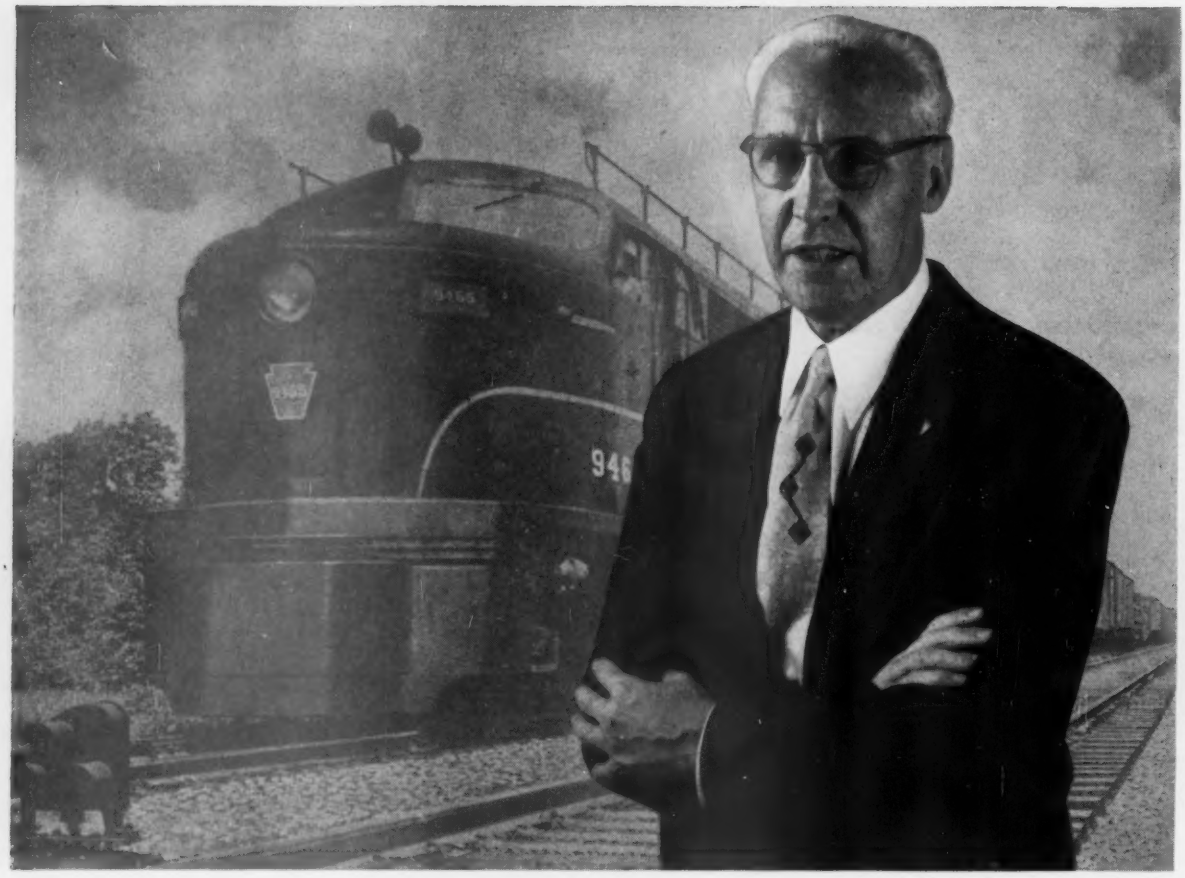


UNITED STATES STEEL

1933 USS HIGH STRENGTH STEELS UNITED STATES STEEL 1957

24 YEARS OF PERFORMANCE

UNITED STATES STEEL EXPORT COMPANY, NEW YORK



"Bell System private line telephone helps us control 1400 road power units from one point"

—Connie Haywood, motive power director of The Pennsylvania Railroad Company

The Pennsylvania's motive power is controlled from one point—by telephone. Bell System private line service permits the Philadelphia bureau to direct road power units efficiently through the vast system day and night.

"We've greatly improved the idle engine problem by centralizing control in Philadelphia," says Connie Haywood, director of The Pennsylvania's motive power control bureau. "And our new system is fast because practically all programming is done through private line telephones. Direct contact in this business is a definite requirement."

This Bell System service proved so successful on the programming of diesels that it was extended to steam and electric unit control. The Philadelphia bureau directs 1400 road power units to where they're needed 24 hours a day.

• • •

Bell System service can work for you as it does for The Pennsylvania. Call your Bell Telephone representative. He will be glad to arrange a study of your communication needs.

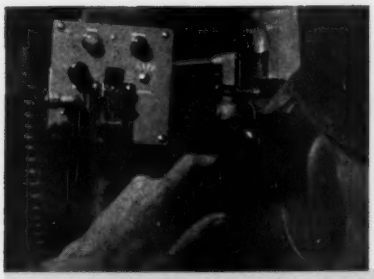
BELL TELEPHONE SYSTEM

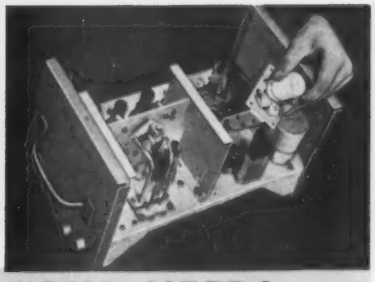
Private Line Telephone • Private Line Teletypewriter

Channels for: Data Transmission • Telemetering • Remote Control • Telephotograph • Closed Circuit TV

SPERRY RADIO SYSTEMS

designed for dependability...
engineered for economy...built for service





CHECK THESE FEATURES AGAINST YOUR NEEDS

OPERATION

Broad-Band Circuitry allows receiver operation throughout the entire railroad band.

Transmitter rated at 30 watts. All components conservatively rated for liberal safety factor.

Signal-to-Noise Squelch Ratio Control is preset, using a new circuit designed especially for railroad systems to assure optimum squelch at all times regardless of conditions.

Exceeds AAR Specifications: The Communications Section of the Association of American Railroads set up certain standards for Railroad Radio. These included three-unit construction and other operational standards to which manufacturers of this type of equipment must conform. Sperry's FE Radio exceeds AAR Specifications for three-unit construction.

INSPECTION AND MAINTENANCE

Three-Unit Construction: Transmitter, receiver and power supply are separate. Lightweight units have carrying handles.

Front Panel Metering: Routine checks are made from the front of units without removing front. Metering and checking are done by a jack-plugged hand microphone and test-set.

Unit Replacement: Can be done by non-specialized maintenance men. Just install a stand-by unit. On-the-spot repairs can be made anywhere.

Easy Plug-In Units: With positive multiple-jack connections, units cannot be plugged into wrong position.

Wide-Open Chassis: No component has to be removed to reach another. All work is open, easy to reach, allows plenty of "elbow room."

FLEXIBILITY AND DURABILITY

Always Up-To-Date: Two-channel to four-channel operation by means of a simple change-over kit! Easy and quick to install.

Aluminum Chassis: Chassis made of aluminum is treated to resist corrosion. Never needs to be painted.

Sealed Transformers: Exclusive plastic capsule protects transformers from humidity or moisture. Hypersil cores for high efficiency, low weight.

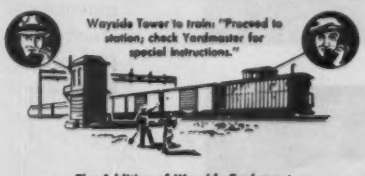
A full line of accessories which answers all railroad needs for flexibility; talk-back speakers, knee switches and controls to free both hands, hand microphones, intercom facilities and others, are ready for use from Sperry.

THE SPERRY WAY IS THE EFFICIENT WAY

With a Sperry Radio System you can

improve schedules • increase operating efficiency • keep equipment utilization at maximum
increase the safety of your operation • move more traffic!

Basic Radio Equipment
on locomotive and caboose will provide for end-to-end and train-to-train communications.



The Addition of Wayside Equipment
will provide for train-to-wayside or wayside-to-train communications.

The Final Addition
of main line equipment provides for complete system control.

Sperry

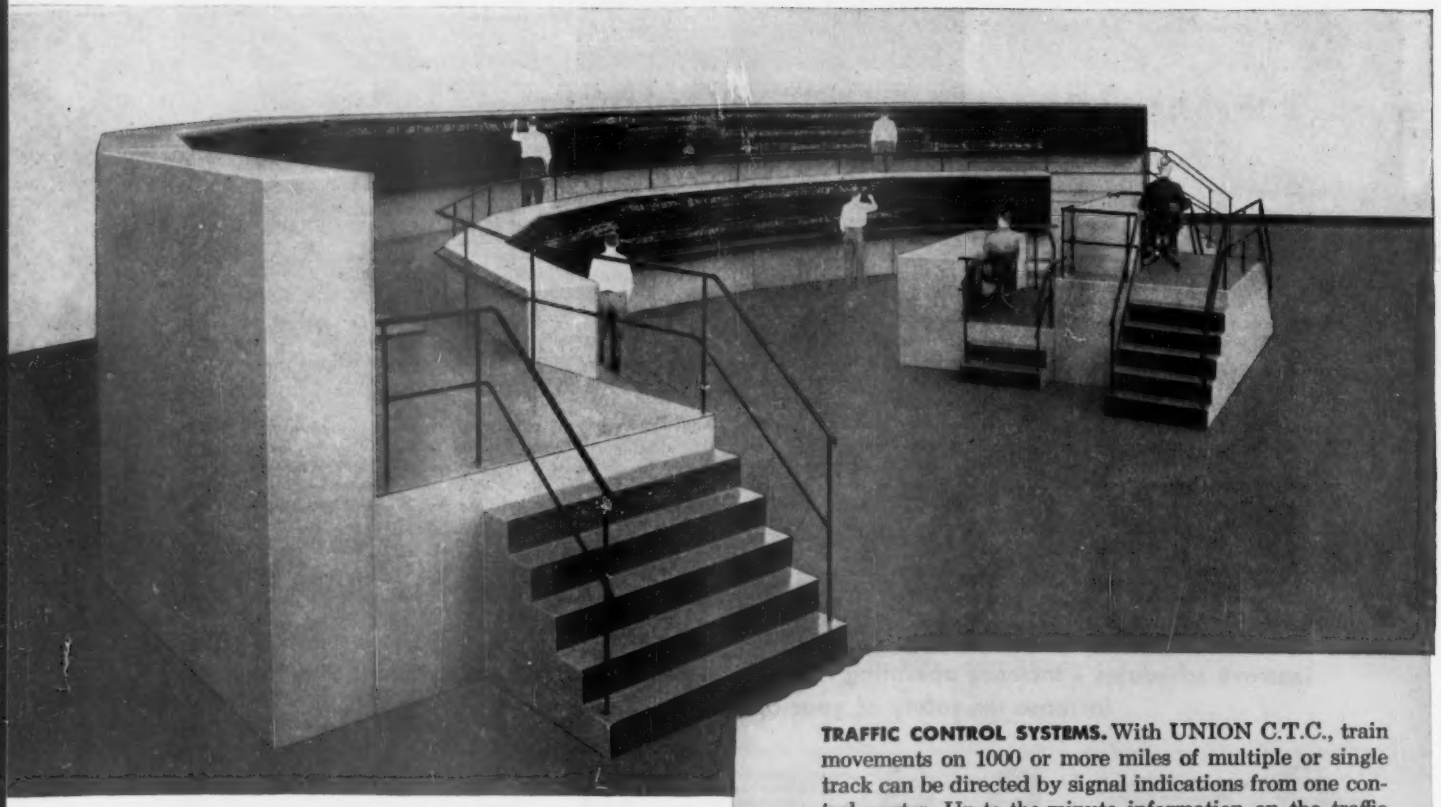
SPERRY RAIL SERVICE

Division of Sperry Products, Inc.
Danbury, Connecticut

UNION ROUTE INTERLOCKING. With this system an operator selects a route simply by pushing two buttons. All switches and signals are properly aligned automatically for the safe and efficient movement of trains.

What a wonderful

. . . with all the newest UNION Control Systems

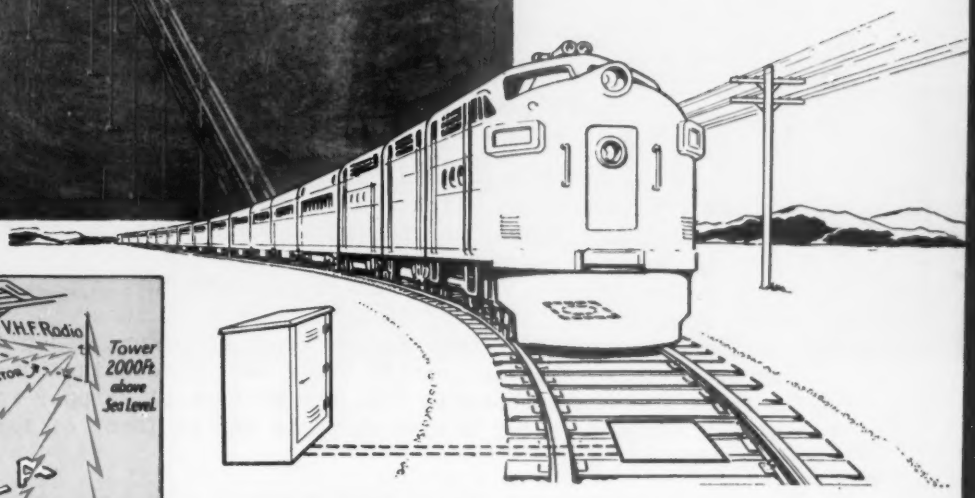


TRAFFIC CONTROL SYSTEMS. With UNION C.T.C., train movements on 1000 or more miles of multiple or single track can be directed by signal indications from one control center. Up-to-the-minute information on the traffic situation is provided visually for an entire railroad.

AUTOMATIC TRAIN CONTROL AND CAB SIGNAL SYSTEM. This equipment automatically limits speed or stops the train in accordance with track conditions ahead. In addition, the signal indications are displayed in the cab.

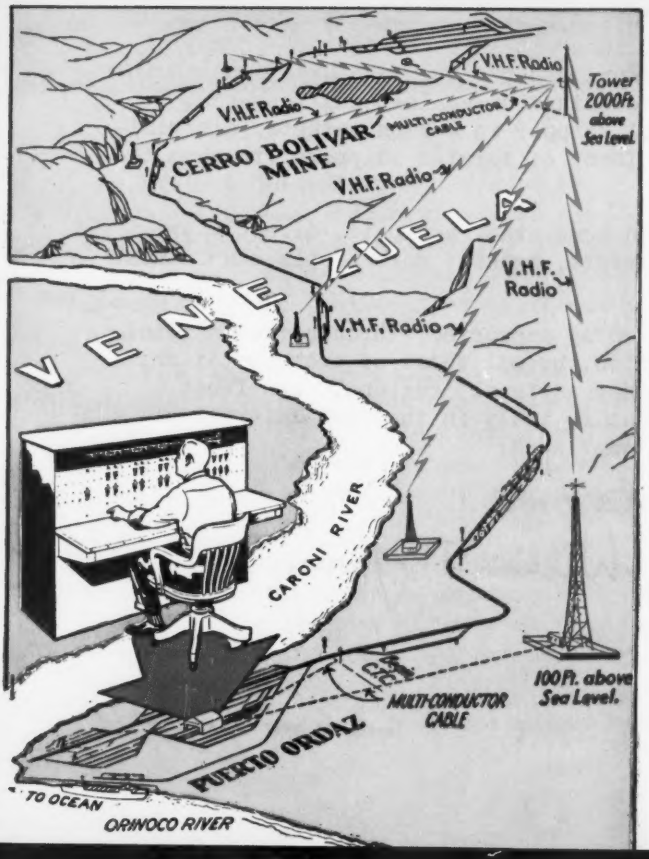
way to run a railroad

AUTOMATIC CONTROL FOR CLASSIFICATION YARDS. A fully automated UNION yard results in lower cost of operation, minimum damage and faster service to shippers. The use of electro-pneumatic retarders and VELAC speed control equipment provides the ultimate in modern operation of classification yards.



IDENTRA* SYSTEM. UNION train identification equipment automatically identifies a train, registers its location, aligns switches, clears signals and identifies the approaching train at the station.

*Trademark



C.T.C. BY MICROWAVE. A new railroad in Venezuela is operated with a UNION C.T.C. System which eliminates the usual line wires and uses very high frequency radio. One operator controls train movements over the entire 90 miles of railroad.

UNION SWITCH & SIGNAL
DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY
SWISSVALE, PENNSYLVANIA

NEW YORK.....CHICAGO.....PITTSBURGH.....ST. LOUIS.....SAN FRANCISCO

ASSOCIATION OF AMERICAN RAILROADS
TRANSPORTATION BUILDING
WASHINGTON 6, D. C.

WILLIAM T. FARICY
PRESIDENT

To Editors and Commentators:

Subject: TAX RELIEF WITHOUT LOSS OF TAX REVENUE

An official of the United States Treasury Department was asked at a Congressional hearing on December 10 whether his department would oppose any reduction in federal taxes in 1957. He replied, "Involving a net loss of revenue, yes."

There are two taxes which could be repealed without substantial net loss to the government and with even the possibility of a net revenue gain. These are the excise taxes on transportation which add 10 per cent to passenger fares and 3 per cent to freight charges. These taxes -- levied during World War II, partly to discourage the use of overburdened public transportation facilities -- are on the users of transportation, not the carriers.

The taxes now yield about $700 million annually in revenue. This does not mean, however, that the government collects $700 million more than it would if the taxes were repealed because:

(1) A major part of the transportation taxes is deductible as business expense and hence reduces the amount which the government would otherwise collect through income taxes.

(2) The transportation taxes are a heavy drag on commerce, reducing the flow of business and thereby decreasing further the amount of net income subject to income tax.

What the government would gain in tax revenue as a result of the benefits to the entire economy which would come from repeal of these taxes cannot be estimated exactly. These benefits would be cumulative in their effect. They would be felt in lower mark-ups and prices at each stage of the movement of goods, through production, wholesaling and retailing. They would flow from the act of simple justice in removing the manifold discriminations inherent in these taxes — discrimination against the shipper and passenger who must use public transportation and in favor of those who can provide their own; discrimination against the long-haul shipper seeking to compete with the short-haul shipper in common markets; discrimination against United States shippers and in favor of foreign shippers, to whom the tax does not apply.

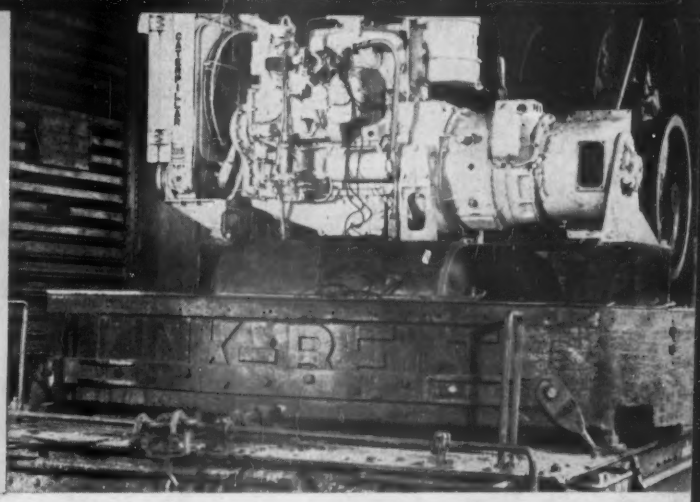
While these taxes bear unevenly upon some, they are paid, directly or indirectly, by all. Their repeal would, therefore, benefit more people than almost any other conceivable form of tax relief.

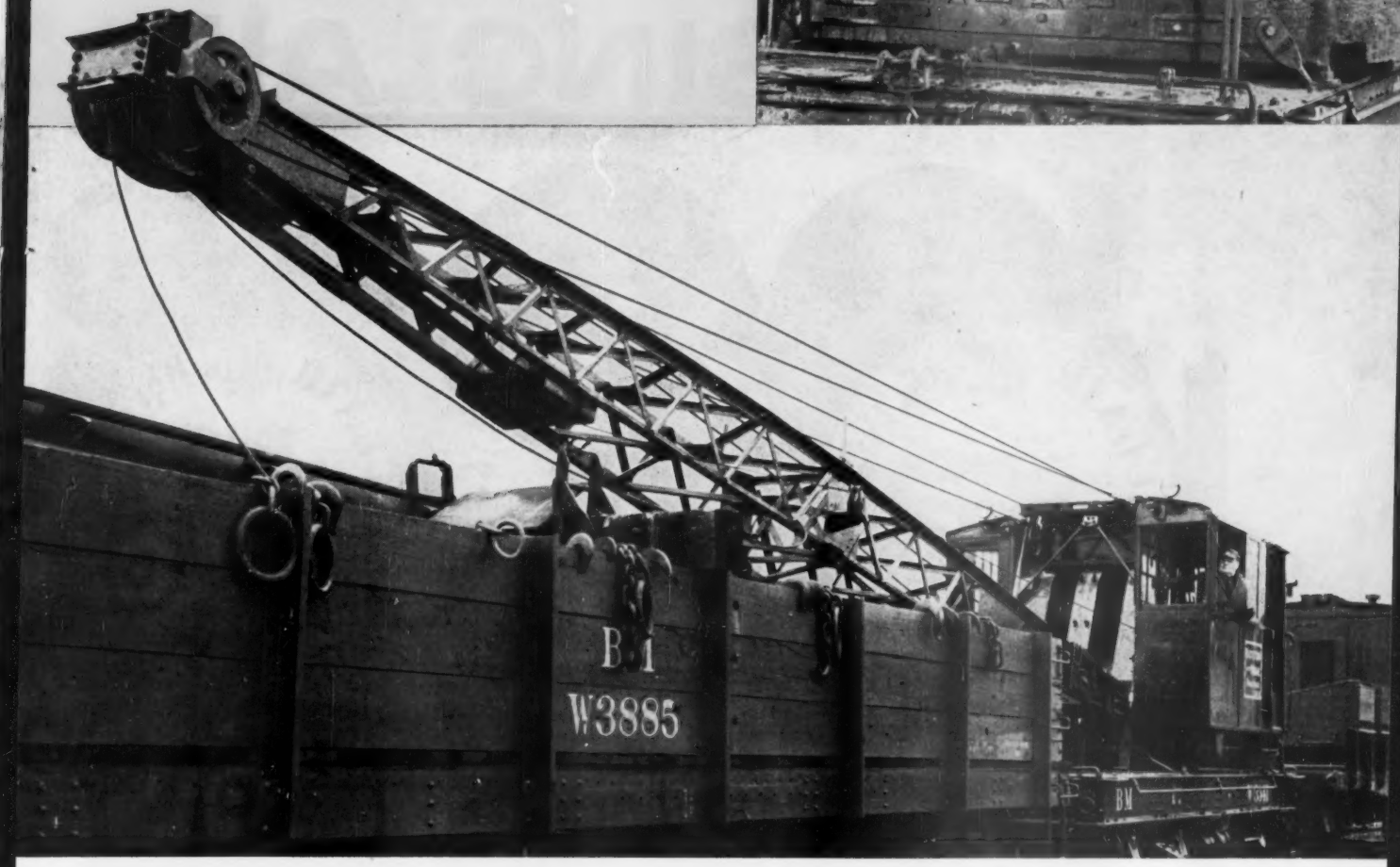
Repeal of the taxes on transportation is supported, through the National Conference for Repeal of Taxes on Transportation, by all forms of transportation, by shippers and travelers, and by numerous other national, regional, and local groups and organizations. It is a measure that is truly in the best interest of all -- truly deserving of the support of all Americans.

Sincerely yours,

William T. Faricy

The Boston and Maine STANDARDIZES ON CAT* DIESELS FOR 10 LOCOMOTIVE CRANES





This Link Belt locomotive crane is just one of 10 such units which the Boston and Maine Railroad is dieselizing with Caterpillar Railroad Engines. Converting from gasoline engines, the railroad found an immediate fuel savings—they now use only seven gallons of low-cost fuel oil per crane for a full 8 hours of operation.

With a Cat D315 Torque Converter Power Unit, this self-propelled 15-ton crane with 40-ft. boom polices a 200-mile stretch. It covers about 15 miles a day on track work. The torque converter power unit produces smooth, load-matching power that gives extra pull under heavy loads and extra speeds on light loads.

The wide range of Cat Railroad Diesels, which can develop up to 650 HP (maximum output capacity), makes it possible for you to save money by standardizing on them for locomotives, rail cars, work cranes and many other types of equipment.

That way, maintenance is speeded up since mechanics need know only one make of engine. Parts can be interchanged. You use the same type of fuel, lube oil, grease and tools on all engines. And your nearby Caterpillar Dealer stocks all the parts for you.

When you order new equipment or repower old equipment, specify efficient, high-production Caterpillar four-cycle Railroad Diesels. Ask your Caterpillar Dealer about these power units. He'll give you specifications and data to help you plan your torque converter installations in the exact diesel power for *your* job.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

MODERN HEAVY-DUTY RAILROAD POWER

For Superior Railroad ...SINCLAIR

Lubrication... sets the pace!

- **SINCLAIR GASCON® GL-HD LUBRICATING OIL**
  Used on over 100 railroads

- **SINCLAIR RUBILENE® OIL**
  For Diesel Locomotive Air Compressors

- **SINCLAIR ROLLER BEARING OIL 62**
  For car and locomotive roller bearings, and traction motor support bearings

- **SINCLAIR 53 CAR OIL**
  Meets and surpasses all AAR requirements

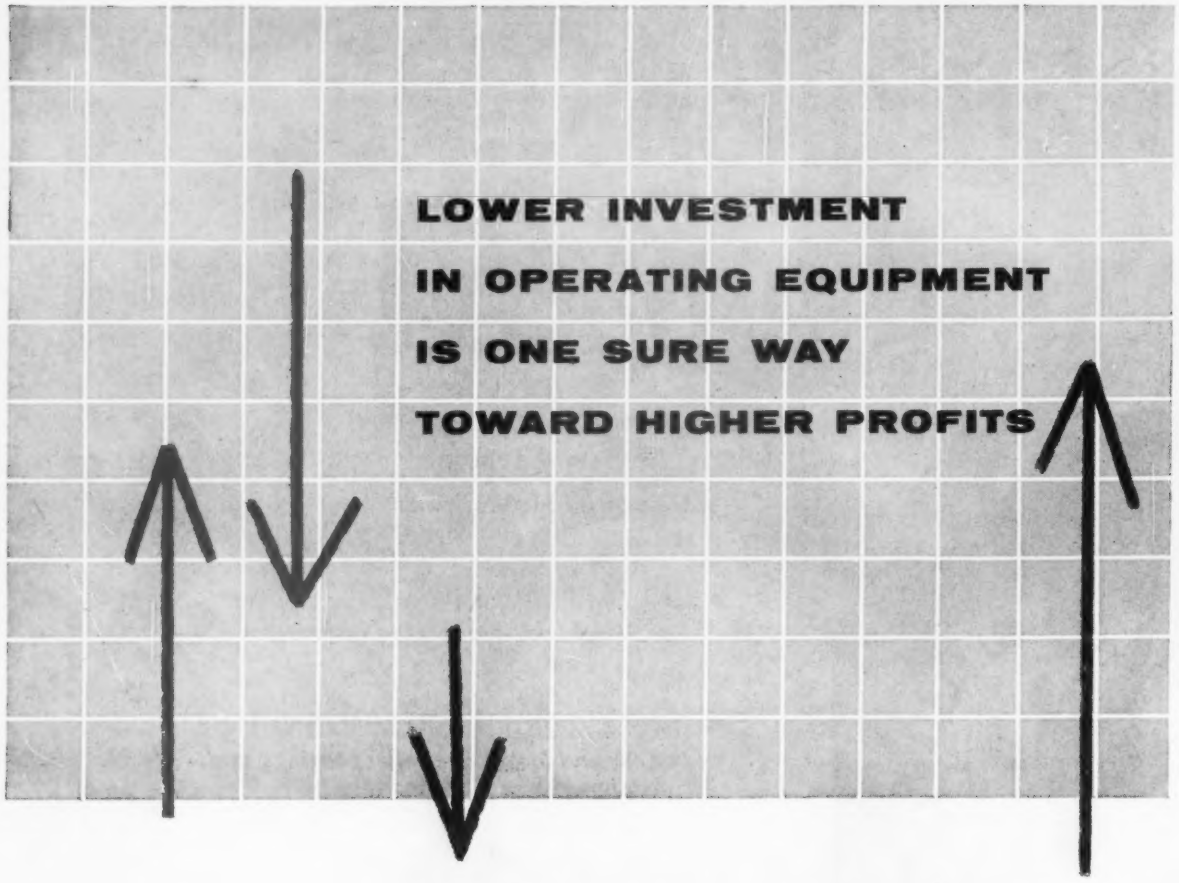
- **SINCLAIR FILTERTAC AIR FILTER OIL**
  For locomotive and passenger car viscous impingement air filters

- **SINCLAIR JET LUBRICANT TM**
  The sturdy, stable, long-lasting Pennsylvania refined traction motor gear lubricant

- **SINCLAIR LITHIUM ROLLER BEARING GREASE**
  For freight and passenger car roller bearings, AAR-approved

- **SINCLAIR AAR BRAKE CYLINDER LUBRICANT**
  A year-'round lubricant for reliable brake action

SINCLAIR REFINING COMPANY
600 Fifth Avenue, New York 20, N. Y.
Railway Sales • New York, Chicago, Houston



take car wheels, for example

Sure, we know car wheels represent a small portion of a railroad's investment, but a penny saved is *still* a penny earned.

Your railroad can save as much as $15,000 in first cost on 800 chilled car wheels for maintenance service, and still have the best *AMCCW* wheels in history. In many types of freight car service this is a practical, economical, sensible way to more profits.

Economy is not the only reason for recommending *AMCCW* chilled car wheels (see list below), but the transfer of $15,000 from investment to the profit side of the ledger for every 100 cars can make a lot of sense in your freight car operation.

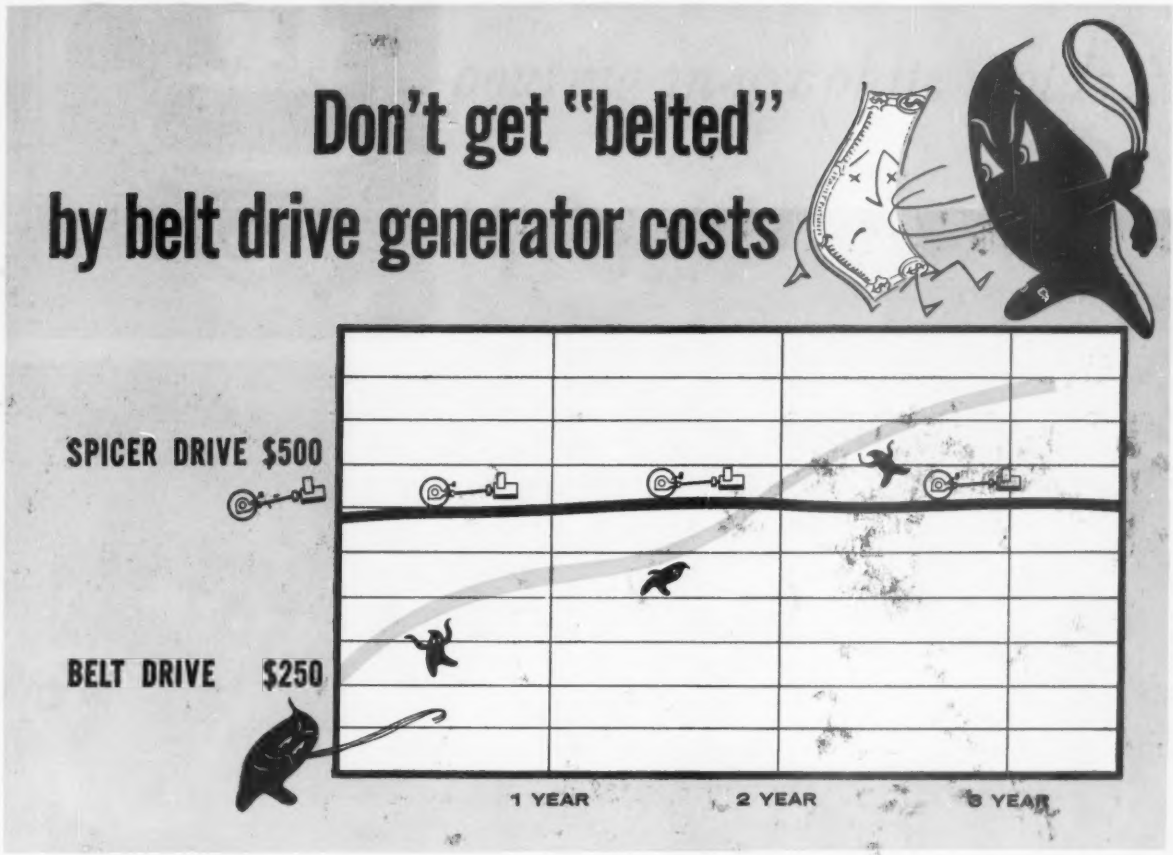
low first cost
low exchange rates
reduced inventory
short-haul delivery
increased ton mileage
high safety standards
complete AMCCW inspection
easier shop handling

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, Illinois

Albany Car Wheel Co. • Southern Wheel (American Brake Shoe Co.)
Griffin Wheel Co. • ACF Industries • Marshall Car Wheel & Foundry Co.
Pullman-Standard Car Mfg. Co. • Canada Iron Foundries, Ltd.
Canadian Car & Foundry Co., Ltd.

Don't get "belted" by belt drive generator costs



Get the actual costs between belt-drive and Spicer Positive-Drive Generators . . . and find out what belt drives really cost you!

How much are replacement belts going to cost you?

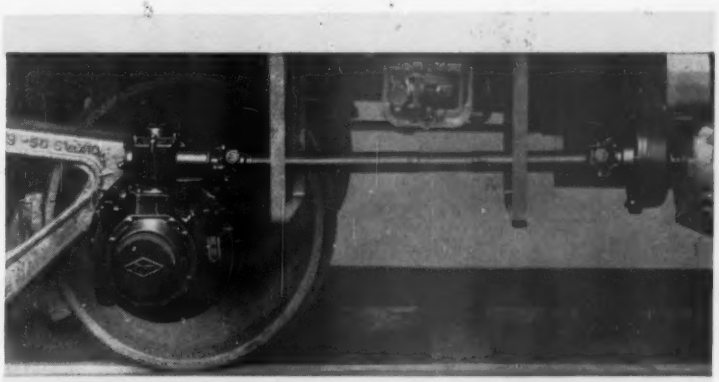
How often will they need replacement?

How much will labor for belt replacement cost?

How much will depleted batteries and shorter battery life due to belt failure cost you?

How much will loss of communications and its subsequent dangers cost you?

These are constant and continuing belt cost factors you cannot escape. Investigate the long-life economies and dependable performance of the Spicer Positive Generator Drive before you buy! Five ratios available for driving all makes and types of generators up to 5 KW.

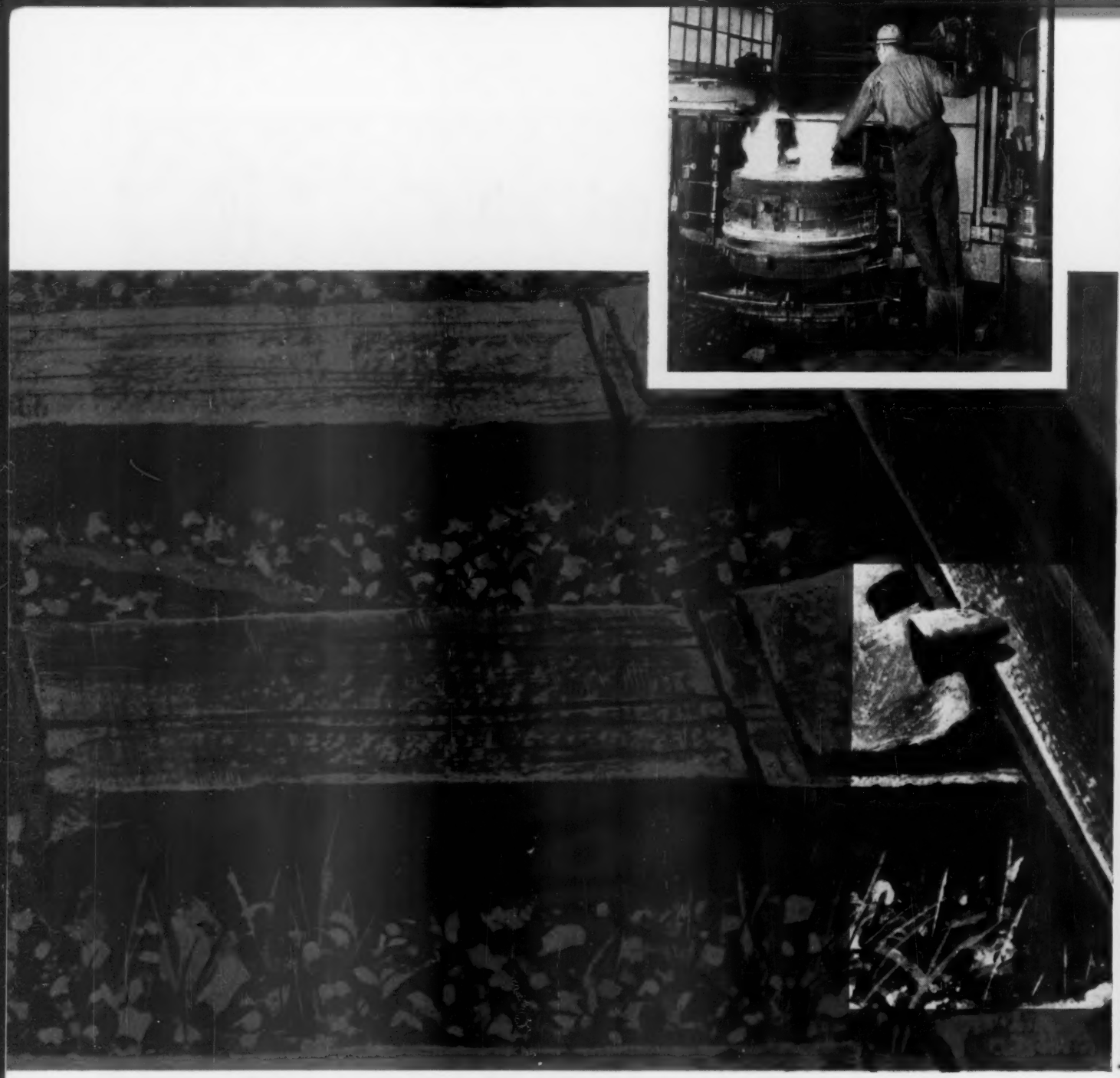


Spicer Positive Railway Generator Drives can be quickly and economically adapted to new car designs and reconditioning jobs. Write for further details.

DANA CORPORATION
Toledo 1, Ohio

Spicer

SPICER PRODUCTS: TRANSMISSIONS UNIVERSAL JOINTS • PROPELLER SHAFTS • AXLES TORQUE CONVERTERS • GEAR BOXES • POWER TAKE-OFFS • POWER TAKE-OFF JOINTS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES STAMPINGS • SPICER and AUBURN CLUTCHES PARISH FRAMES • SPICER FRAMES

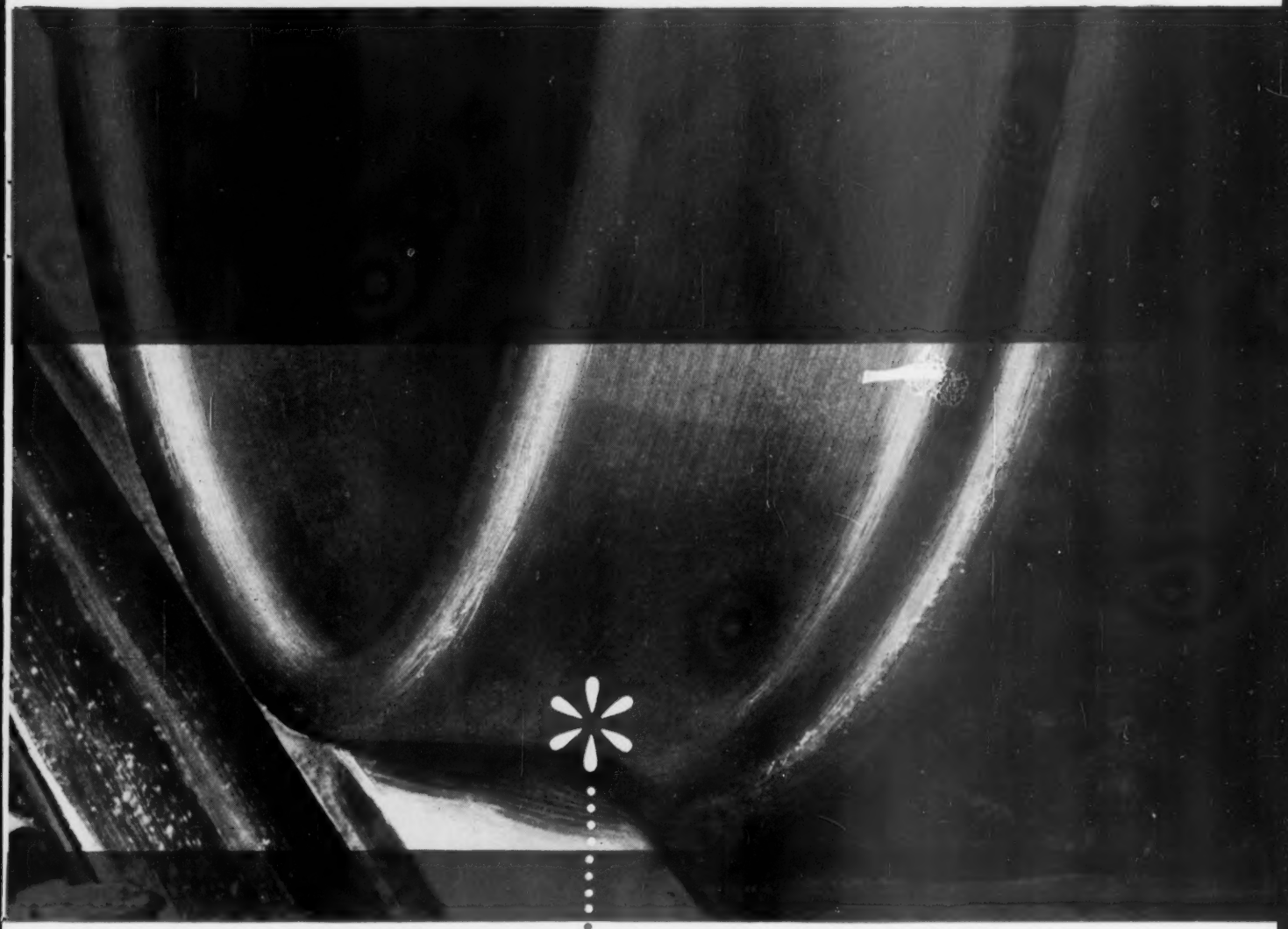


THE TOUGHEST METAL IS ON

Under pressure, the metal rises smoothly into the precision-machined graphite molds . . . and the result is another Griffin EQS Wheel ready for service *as-cast*. No machining of flange or tread surfaces is necessary. The surface metal—the toughest metal in the casting—remains on the tread and flange where it cuts your wheel costs per car mile!

And, still without machining, tolerances can be held to just two tape sizes. When railroads "go EQS" they'll reduce wheel inventories 75%!

Because of pressure-pouring in graphite molds...



THE TREAD AND FLANGE

GRIFFIN EQS

ELECTRIC QUALITY STEEL

GEARED TO PROGRESS
R I
MEMBER

GRIFFIN WHEEL COMPANY, 445 N. Sacramento Blvd., Chicago 12, Illinois

In Canada: GRIFFIN STEEL FOUNDRIES, LTD., St. Hyacinthe, Quebec

Give the "green" to ***GRIFFIN*** *and watch your costs go down!*

ON SHORTLINE AS WELL AS MAINLINE ROADS IT'S BENDIX FUEL INJECTION

All over the country shortline railroads like those listed here are giving 'round-the-clock service that helps make the American railroad system the envy of the world.

Using 70-ton and 95-ton General Electric road switchers powered by Cooper-Bessemer engines with Bendix* Fuel Injection Equipment, these shortline roads maintain high operating standards in the performance of their important work.

Bendix is proud that its fuel injection equipment has received such high endorsement from so many shortline railroad operators.

It furnishes further evidence that when dependable, efficient, and economical operation is a must Bendix is the logical choice for fuel injection equipment. SCINTILLA DIVISION OF BENDIX AVIATION CORP., SIDNEY, N.Y. EXPORT SALES AND SERVICE: BENDIX INTERNATIONAL DIVISION, 205 EAST 42ND ST., NEW YORK, N.Y. *REG. U.S. PAT. OFF.

This Bendix pump and nozzle are used on the type of road switcher pictured above.

Partial list of shortline roads using Bendix Fuel Injection Equipment

ALBANY & NORTHERN
ARKANSAS & OZARKS
BALTIMORE & ANNAPOLIS
BARRE & CHELSEA
BELFAST & MOOSEHEAD LAKE
COLORADO & WYOMING
DES MOINES & CENTRAL IOWA
EAST ERIE COMMERCIAL
FT. DODGE, DES MOINES & SOUTHERN
FRANKFORT & CINCINNATI
GEORGIA NORTHERN
GREENVILLE & NORTHERN
HAMPTON & BRANCHVILLE
LANCASTER & CHESTER
LIVE OAK, PERRY & GULF
MISSISSIPPI EXPORT
MOBILE & GULF
MUNCIE & WESTERN
NORTHAMPTON & BATH
RAHWAY VALLEY
SANFORD & EASTERN
SOUTH GEORGIA
TALLULAH FALLS
VALDOSTA SOUTHERN
WASHINGTON & OLD DOMINION

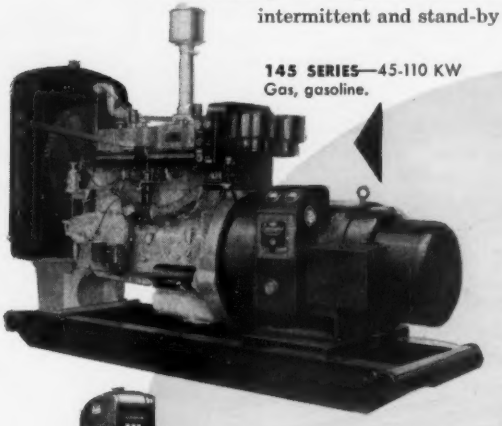
Scintilla Division

Bendix
AVIATION CORPORATION

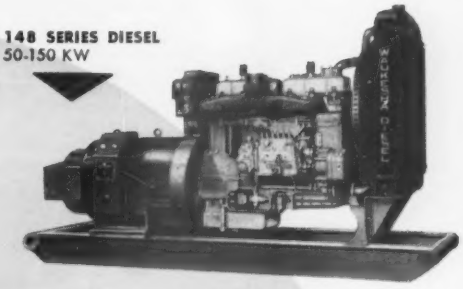
NOW— a complete line of
WAUKESHA
Industrial ENGINATORS®

Waukesha now offers you a superb line of Enginators—backed by half a century of experience in building heavy-duty internal combustion engines and electrical equipment. Designed for reliable performance on all types of fuel, these Waukesha power units supply accurately balanced engine and generator combinations in applications requiring a smooth, steady flow of power for continuous, intermittent and stand-by duty.

50-600 KW • NATURAL GAS LPG • GASOLINE • DIESEL

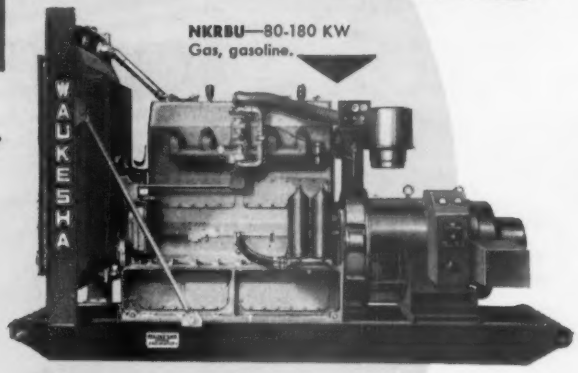


145 SERIES—45-110 KW
Gas, gasoline.

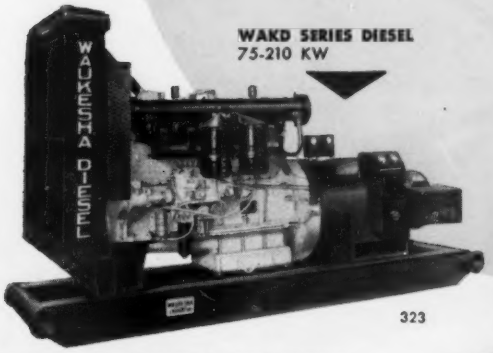


148 SERIES DIESEL
50-150 KW

WAK SERIES—75-170 KW
Gas, gasoline.

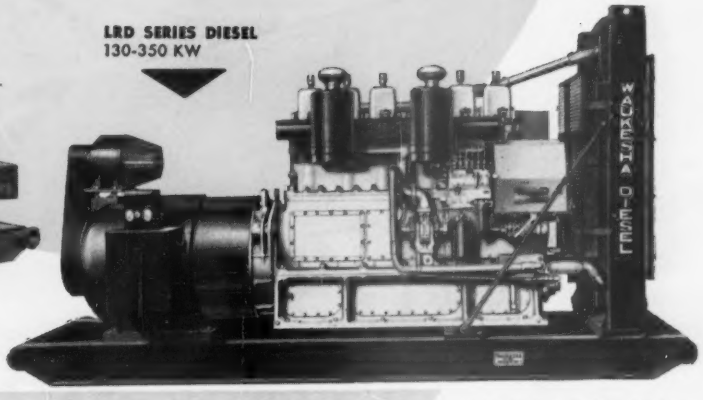


NKRBU—80-180 KW
Gas, gasoline.



WAKD SERIES DIESEL
75-210 KW

323



LRD SERIES DIESEL
130-350 KW

WRITE FOR BULLETINS FOR THESE AND OTHER MODELS.

WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN *RAILWAY DIVISION*

1
2
3
4
5

Why Electro-Motive is expanding facilities 42% at La Grange

According to the best projected census and economic growth figures available, if the railroad industry only maintains its *present* share of the total passenger and freight business in this country, there will be forty per cent more passengers and ton-miles to be hauled by American railroads in 1966. And there are many signs that the railroads' share of the total market could rise well above this figure.

By expanding facilities now, Electro-Motive will be in a position to serve you better, to help you anticipate your increasing motive-power requirements, keep pace with the demands of an expanding economy.

Thus, whether it's new and ever better standard locomotive units, re-manufacture and upgrading of older units, research and development of entirely new engines and other railroad products, Electro-Motive is in a better position than ever to support your position in the transportation field. It's our way of saying, "We have great faith in your future".

1 BASIC MANUFACTURING AREA

Over 17,000 Diesel-electric units have been produced in the plants of Electro-Motive. Today, they are operating 20 million switcher yard-hours, hauling almost 2 billion passenger train-car miles and nearly 900 billion ton-miles every year.

2 LOCOMOTIVE RE-MANUFACTURE

Pioneered by Electro-Motive, this new service is saving the railroads millions of dollars in reduced operating costs by upgrading horsepower ratings and general complete modernization.

3 PARTS CENTER

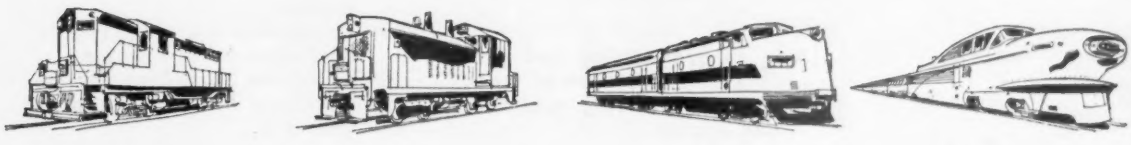
This complete warehouse stock services the other six warehouses and serves as a Midwest warehouse also. These complete facilities have been designed and enlarged to help you keep your motive power operating at top efficiency all the time.

4 RESEARCH AND DEVELOPMENT CENTER

From the time the first Diesel became a reality, this facility has worked tirelessly to bring the General Motors Diesel-electric to the brilliantly engineered piece of equipment it is today. More improvements, more new products are on the way.

5 NEW MANUFACTURING FACILITIES

This represents the new investment in our future, so closely allied to yours. In this way, we insure the extension of our program of continuing high quality and improvement, new design, better services to the nation's railroads.



GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS

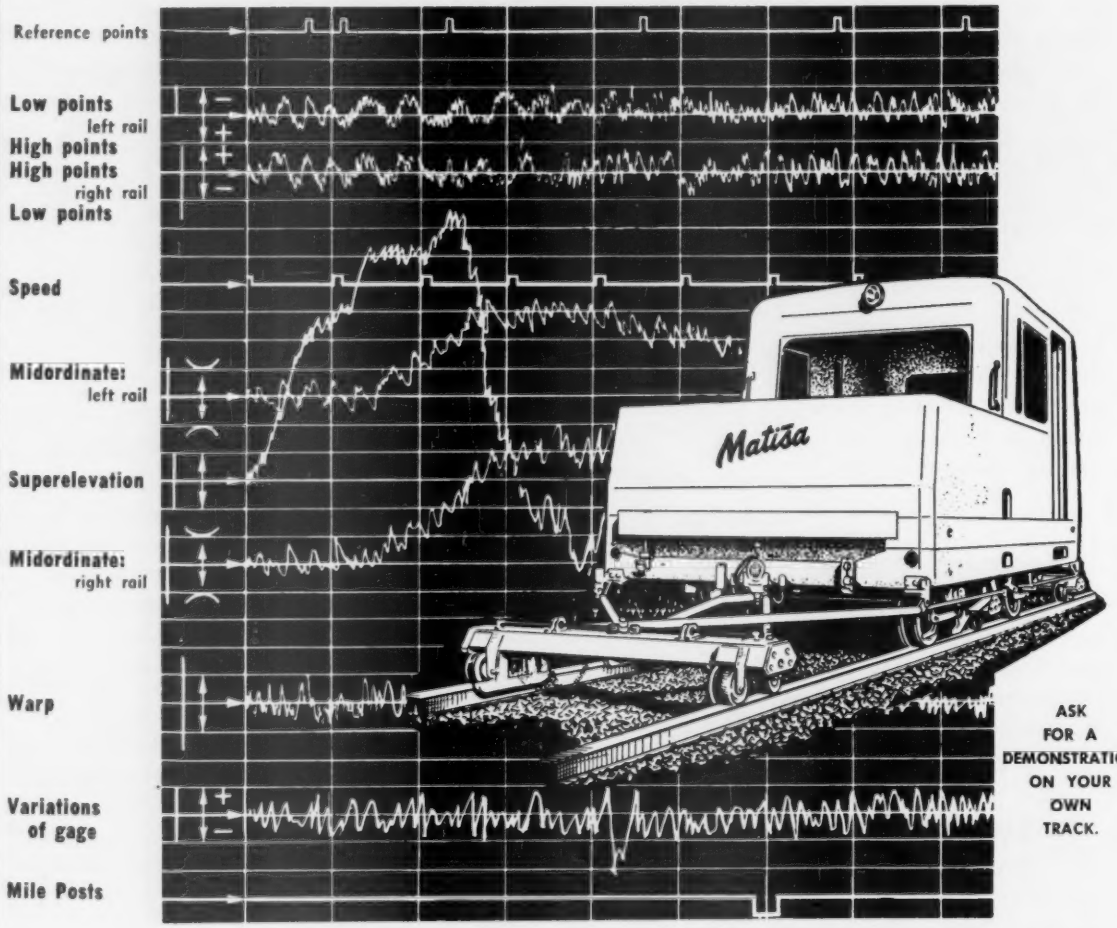
LA GRANGE, ILLINOIS • *HOME OF THE DIESEL LOCOMOTIVE*

In Canada: General Motors Diesel, Ltd., London, Ontario

NOW *Matisa* BRINGS YOU *QUALITY CONTROL*

FOR YOUR TRACK MAINTENANCE

THE NEW MATISA TRACK INSPECTION CAR . . . is a complete mobile instrument for the accurate measuring *and recording* of track conditions, and the detection and locating of track defects.



ASK FOR A DEMONSTRATION ON YOUR OWN TRACK.

The *Matisa* Track Inspection Car enables track-maintenance officers:

(1) to record quickly and *precisely* the condition of track prior to starting programmed work;

(2) to verify the effectiveness of completed work programs;

(3) to maintain a graphic record of frequent inspections;

(4) to create incentives for supervisory officers, foremen and men.

The *Matisa* EQUIPMENT CORPORATION

1020 WASHINGTON AVENUE • CHICAGO HEIGHTS, ILLINOIS

NEW POWER...NEW LIFE...NEW "LOOK" FOR YOUR OLD STEAM WRECKER...

With L. B. Smith Diesel Conversion

The 29-year-old Long Island locomotive wrecking crane shown above has just been completely modernized in our shops. Conversion from steam to Diesel has added years of service, increased efficiency and reduced operating costs on this 150 ton Brownhoist.

Conversion included plenty of power in a GM Diesel with Twin Disc torque converter. Clutches are air-operated by a Westinghouse compressor. The new "Look" benefits the operator, for he now has a complete view of his work from the cab which has been relocated in a right front position. All controls have been placed in the same arrangement with which he is familiar.

This is one of some 50 cranes modernized by L. B. Smith personnel. With a major portion of our large plant facilities devoted to the repair of cranes, shovels and heavy equipment, we make every possible effort to keep the quality of our work equal to the reputation we have earned over the years.

If your Dieselization program includes the conversion of wrecking cranes, you will undoubtedly benefit from discussing it with us.

For complete information, phone or write

L. B. SMITH, INC.

CAMP HILL, PENNSYLVANIA

Telephone (Harrisburg) RE 7-3431

Now available–at

HOW MUCH MONEY THIS SPRING SAVE YOUR

no extra cost . . .

CAN ON RAILROAD?

Only you can answer that question —because only you know what your spring-replacement costs are. But, *the higher they are, the more you will save with ASF Extended Life brand springs.*

That's because test after test in the laboratory proves that Extended Life Springs outlast ordinary springs an average of ten to one. The test results are so conclusive that it is not a question whether they will last longer under your cars, but only how many *times* longer. Here's a way to find out: Specify new ASF Extended Life Springs where types of service or runs result in bad-order cars due to spring failure. You'll soon find that you get premium service—at no premium in price!

E-X-T-E-N-D-E-D L-I-F-E SPRINGS

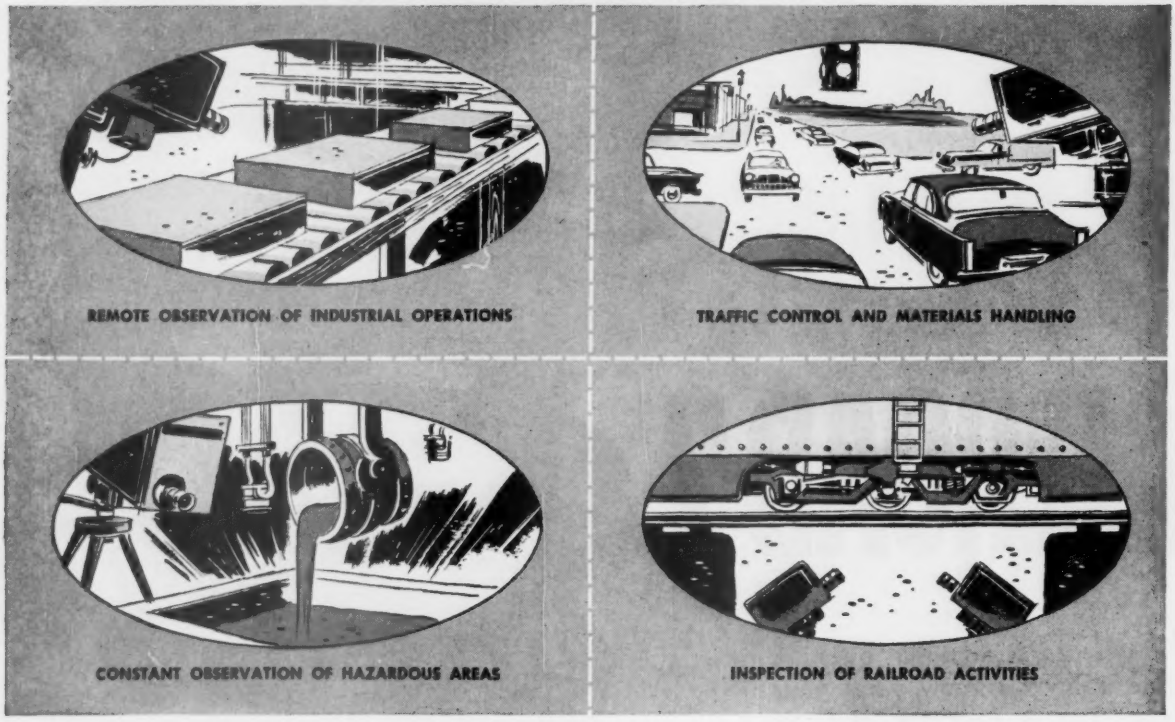
A contribution to railroad progress...through research by

AMERICAN STEEL FOUNDRIES

Prudential Plaza, Chicago 1, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

GENERAL ELECTRIC CLOSED CIRCUIT TV PROVIDES RELIABLE VISUAL COMMUNICATION AT LOW COST



REMOTE OBSERVATION OF INDUSTRIAL OPERATIONS

TRAFFIC CONTROL AND MATERIALS HANDLING

CONSTANT OBSERVATION OF HAZARDOUS AREAS

INSPECTION OF RAILROAD ACTIVITIES

With Compact INTRA-TEL TV on the job, you can sit at your desk and see immediately *and at will:*

- Proceedings in any manufacturing department
- Close-ups of indicators, gauges, or dangerous operations
- Smoke conditions at the top of the stacks
- Outgoing or incoming shipments at loading docks
- Persons being interviewed for credit, employment, security, etc.
- Documents and signatures

in fact, almost—ANYTHING... ANYWHERE... ANYTIME!

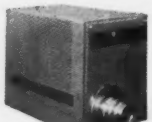
THREE self-contained units, with plug-in connecting cable, bring you a complete visual communications system that is effective, efficient, and practically foolproof. Each unit is portable, and ruggedly built to withstand years of heavy industrial use—under many conditions of heat, humidity, vibration, dust, fumes, etc.

The light-weight, compact units of the INTRA-TEL system are easily moved to cover changing needs and situations. Additional monitors or standard TV receivers can be used to provide multiple viewing locations, either locally or remotely. A multiple camera system, with accessory switching equipment, is also available.

WRITE TODAY FOR FREE BOOKLET!

This new, illustrated booklet explains the entire INTRA-TEL System...lists many industrial applications. Your copy is waiting—write today, on your letterhead please, mentioning ECL-53 for black and white, or ECL-39A for color system. *General Electric Company, Industrial Electronics Division, Broadcast Equipment, Section A6217, Electronics Park, Syracuse, New York.*

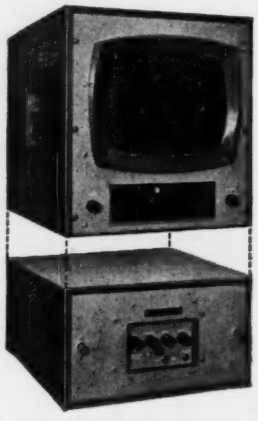
The basic system is housed in three small, compact units...easy to place, easy to move!



The CAMERA
Type TG-2-A. Takes the picture of subject, scene, or action.

The MONITOR
Type TH-6-A. Shows the picture as taken by the camera. Conventional home-style TV receivers may be used as additional receivers or monitors.

The CONTROL UNIT
Type TH-5-A. Controls and transmits the picture from camera to monitor.



Progress Is Our Most Important Product

GENERAL ELECTRIC

this is the backbone of the very finest freight car in the world

e don't know what "brand" of freight car this is—nor do we care—because WE ARE NOT CAR BUILDERS

. . . but we do know that a man who knows enough about underframes to specify this one could not build anything less than the very finest freight car in the world!

INTERNATIONAL STEEL COMPANY
RAILROAD DIVISION • EVANSVILLE 7, INDIANA

Precision fabricators of correctively designed components:
UNDERFRAMES . . . SIDE ASSEMBLIES . . . DOORS . . . BULKHEADS . . . FLOORS . . . HOPPERS

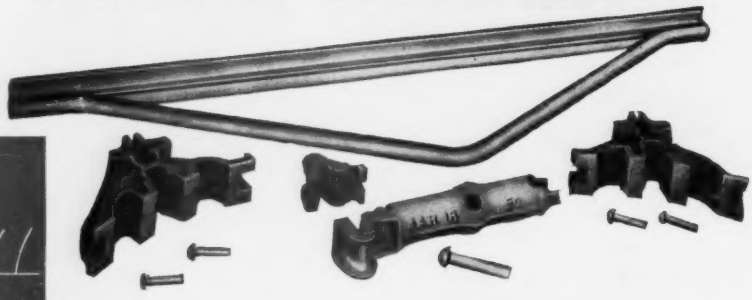
DAVIS

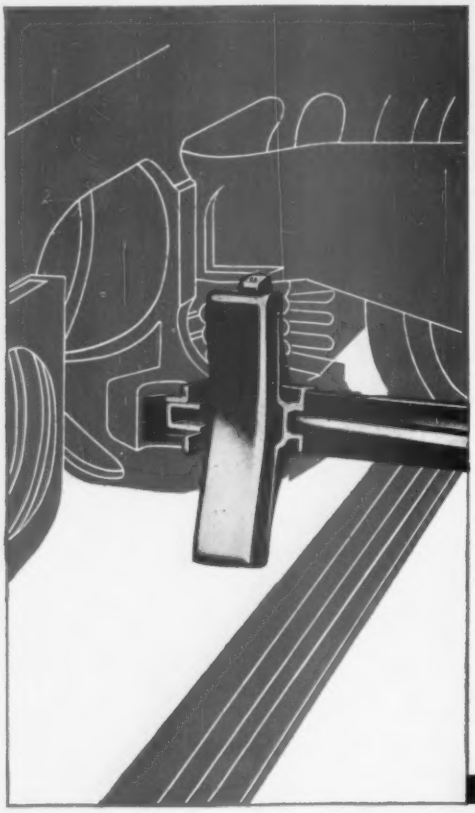
A.A.R. Approved
No. 18
Certificate No. 50

SOLID TRUSS BRAKE BEAMS

A RECOGNIZED STANDARD FOR MORE THAN 30 YEARS

Whether for Conventional Hanging or for UNIT TRUCKS Davis Solid Truss Brake Beams are DECISIVELY SUPERIOR.





ANY PART RENEWABLE

Without Disturbing the Truss!

OTHER IMPORTANT FEATURES:

- One piece FORGED truss
- No Threaded Rods
- Interchangeable Right and Left Brake Heads Are Easily Applied without Dismantling Truss.

DAVIS

BRAKE BEAM COMPANY

Plant and General Office — Johnstown, Pa.
Boston • Chicago • Cleveland
Richmond • St. Louis • San Francisco

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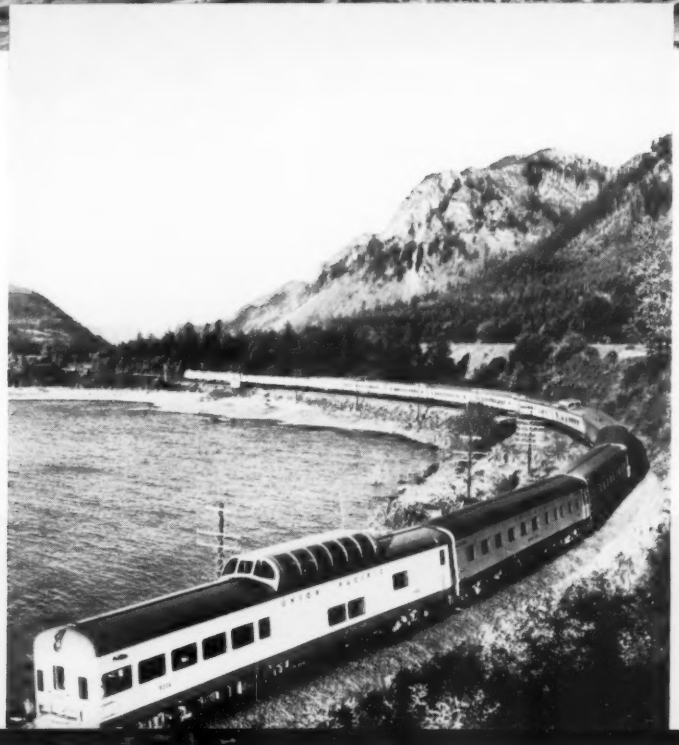
SETS THE PACE IN MODERN PASSENGER EQUIPMENT



lightweight

conventional

pioneering these new developments...

DOME CARS

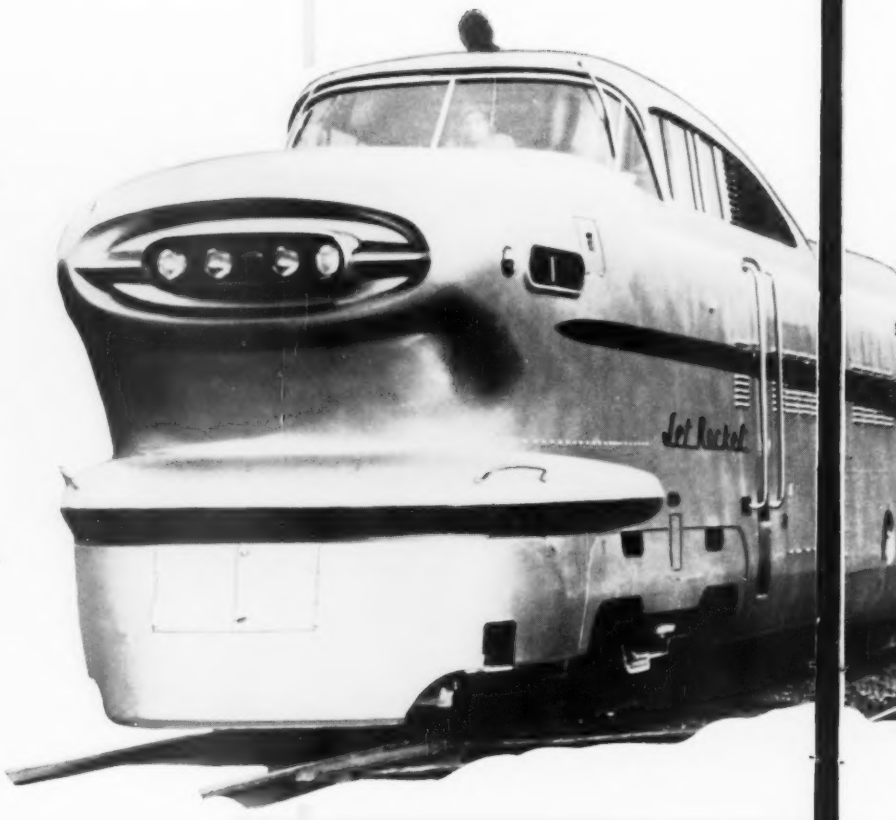
—Important improvements in "conventional" equipment include the striking, revenue-building ACF-built Dome Cars now in regular service on the Union Pacific.

FIRST DOME DINERS

—Prestige and revenue-building public appeal mark the first Dome Diners... built by ACF for the Union Pacific, now in regular service.

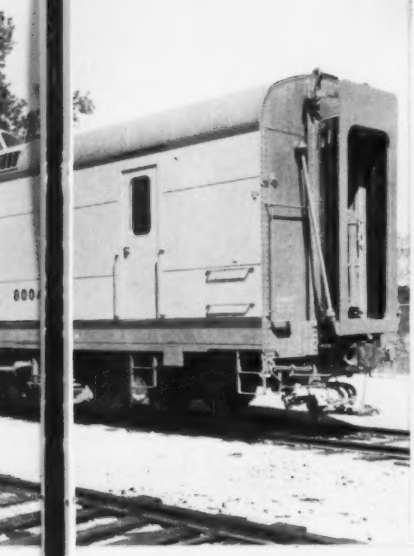
Talgo

—Cutting costs in regular revenue service on two runs daily between Peoria and Chicago on the Rock Island Line, the light, low ACF-built TALGO first proved its value in over six years of service in Spain. The Rock Island's "Jet Rocket" TALGO seats over 300 passengers, weighs only 451,000 pounds including motive power... combines ultra-modern passenger appeal with major economies in operation and maintenance. *Soon:* two more TALGO trains will go into revenue service on the New Haven and the Boston & Maine, making a total of three in service. ACF is truly first in proven, ultra-modern lightweight trains.



and Conventional Coaches, too

—modern, conventional coach equipment, built to ACF's high standards, such as those made for the Louisville & Nashville Railroad.



BAGGAGE-MAIL CARS

—Conventional style, conforming to all Post Office regulations... a complete Post Office on wheels, styled to match modern passenger trains.

BAGGAGE-EXPRESS

a c f's new Baggage-Express Car makes the best of baggage service, costs far less to buy and to operate than any other baggage car ever developed. Designed to fit attractively into modern passenger trains, it offers the ideal opportunity to accommodate baggage and express with low-cost equipment.

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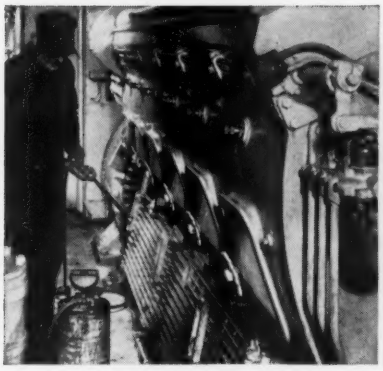
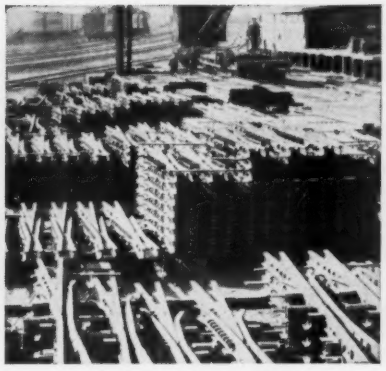


Cleaning diesel interiors



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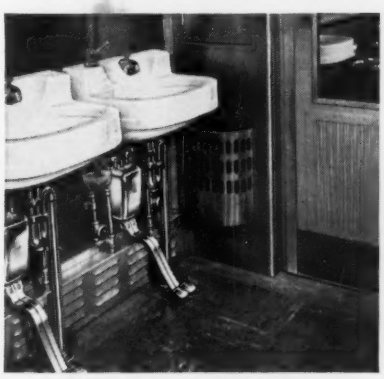
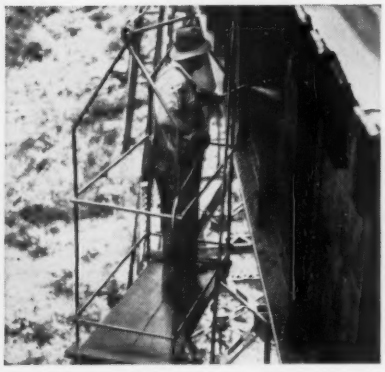


Cleaning and de-odorizing



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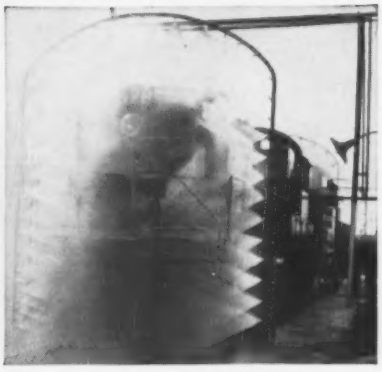
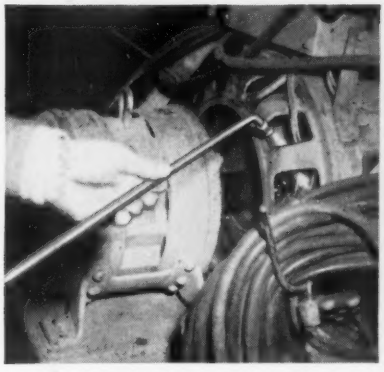


High-pressure spray washing



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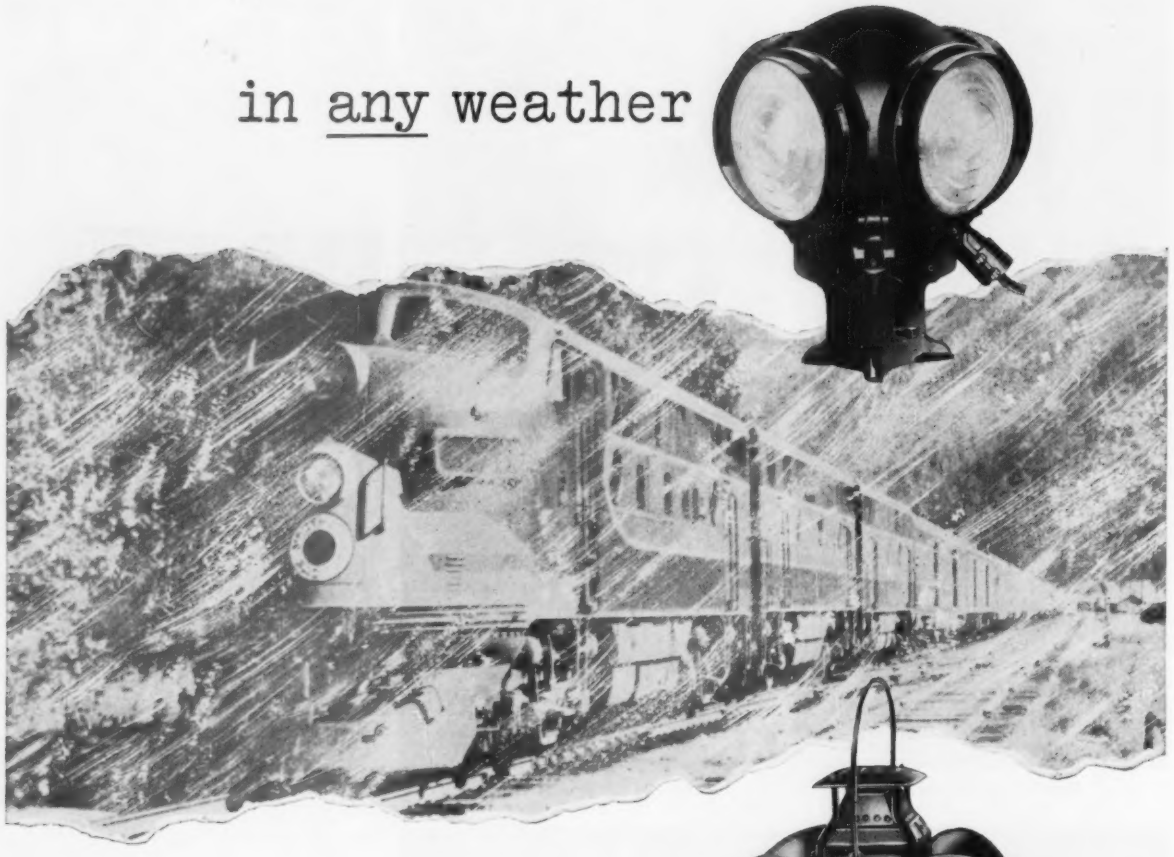

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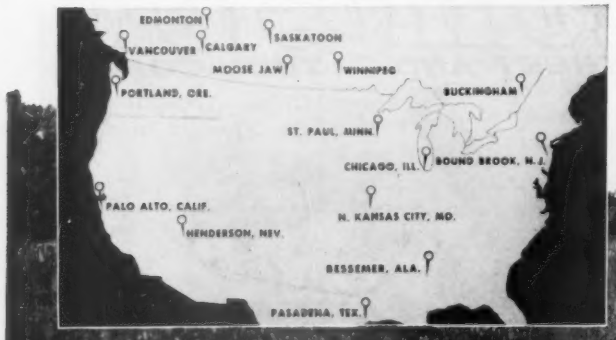

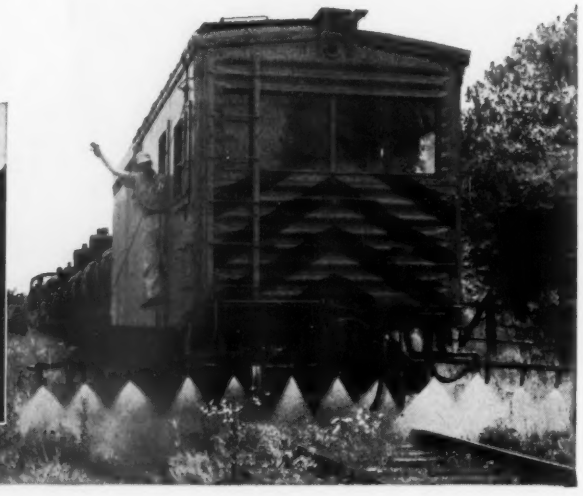

PS-1
PS-2
PS-3
PS-4

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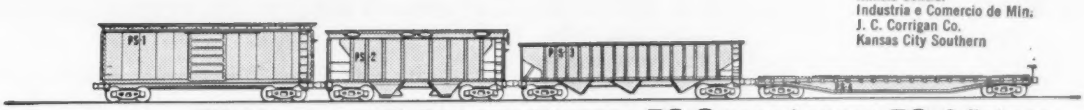

PS-1 box car, **PS-2** covered hopper, **PS-3** open hopper, **PS-4** flat car

standardized freight cars

from the experience of the world's largest carbuilder

Eleven years ago, Pullman-Standard first offered standardized freight cars to the railroad industry. This meant breaking with traditional custom carbuilding methods. But it opened a new era of carbuilder-designed freight cars, built to fulfill the needs of the railroads and their shippers.

Standardized cars get unusual strength from design, not merely from costly weight. And long runs of like cars allow full use of modern mass production techniques. The result and advantages of standardization: better freight cars with longer life, lower maintenance and reduced first cost.

The worth of P-S Standardized Freight Cars is proved by more than 110,000 units purchased and put on order by eighty-seven shipper-conscious railroads and sixteen other users. From 1946 to 1957, one-fourth of all U. S. box cars built have been PS-1 Standardized Box Cars.

And in recent years, Pullman-Standard has added the PS-2 Covered Hopper, PS-3 Open Top Hopper and PS-4 Flat Cars to its standardized line. Acceptance of these cars, too, has been outstanding.

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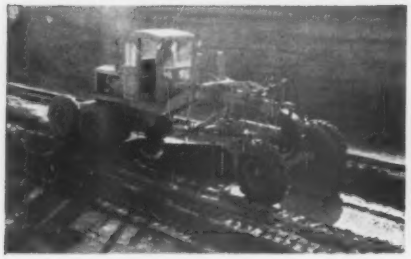
FOR RIGHT-OF-WAY MAINTENANCE

HUBER-WARCO 5D-190 MOTOR GRADER

HELPS KEEP TRAFFIC RUNNING ON TIME



Among modern railroad systems, the use of rubber-mounted equipment for track and right-of-way maintenance is rapidly replacing track-mounted equipment. There is no longer a need to hold up trains or lose important work-crew man hours, while this equipment is moved to a sometimes distant siding.

The Huber-Warco 5D-190 motor grader fits right into this new approach to modern railroading. One man and one grader can perform a variety of jobs without tying up mainline traffic. With plenty of power (195 h.p.) and weight (31,450 lbs.), blended perfectly together for top efficiency, it is possible to move more material with fewer passes.

An Allison torque converter protects the unit from shock loads while a full power-shift transmission—WITHOUT CLUTCH— permits quick shifts under full load, without interrupting the power flow from the engine to the load. A tail shaft governor automatically adjusts engine RPM to meet any load condition, at any speed set by the operator.

Exclusive with Huber-Warco motor graders is the completely hydraulic cab-controlled blade movement which permits the blade to be moved from 90° on one side to 90° on the other without leaving the cab. There are no manual adjustments.

A power sliding moldboard is standard equipment on the 5D-190—there's no deviation from the line of travel. Other important features include: full 360° blade rotation without removing scarifier teeth; four wheel brakes are standard; high front and rear axle clearance; wheels and tires are interchangeable; and all controls are within easy reach of the operator.

Other Huber-Warco torque converter grader models include the 6-D and 7-D series. Models with standard transmission include the 4D-75, 4D-85, and 4D-115. For a demonstration—see your nearest Huber-Warco distributor.

For a demonstration — see your nearest Huber-Warco distributor

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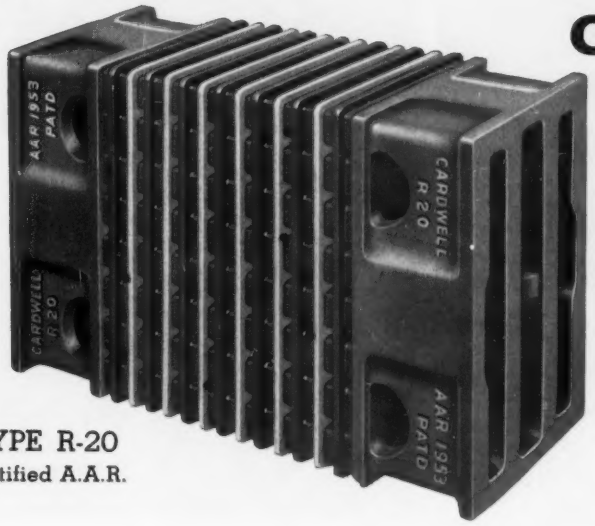
CARDWELL RUBBER DRAFT GEAR



TYPE R-20
Certified A.A.R.

PRE-COMPRESSED..EASILY INSTALLED..NO SPECIAL ATTACHMENTS

Fits standard 24⅝-inch pockets! Uses two standard 2¼-inch followers per gear. Without draft rigging changes of any kind, Cardwell R-20 Rubber Draft Gears are completely interchangeable.

The R-20 is self-contained, factory-assembled, pre-compressed for easy installation. It is symmetrical . . . either end may be applied toward the coupler butt.

Performance-wise, the R-20 surpassed by good margins A.A.R. tests for capacity, endurance and sturdiness under M-901A specifications. A companion gear, the R-18 Cardwell Rubber Gear for 18½-inch pockets, also is A.A.R. Certified!

Specify Cardwell Westinghouse Draft Gears . . . Friction or Rubber type. Send today for catalogs.

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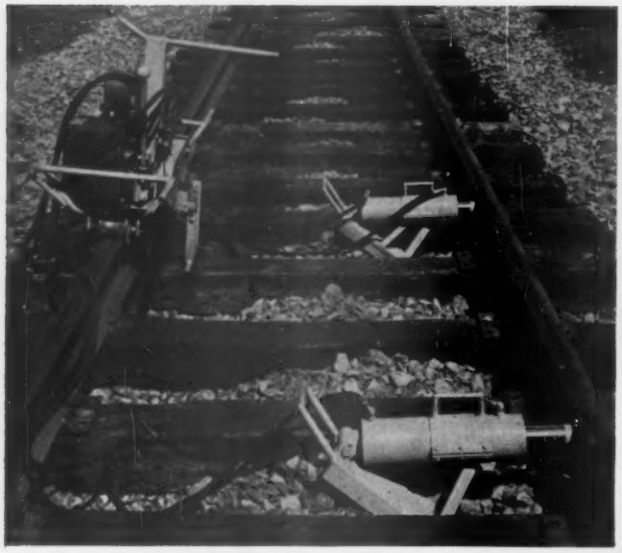
Cardwell V-18 Friction Draft Gear
Westinghouse Friction Draft Gear
Cardwell M-25 Friction Draft Gear
Cardwell Friction Bolster Spring

Specify
CARDWELL
WESTINGHOUSE



Upper left—Model P-O gasoline engine powered Hydraulic Track Liner operating two hydraulic rams.

Upper right—Model P-O gasoline engine powered Hydraulic Track Liner operating attachment with double flanged track rollers, adjustable for any height and weight of rail.

Lower left—Model P-O gasoline engine powered Hydraulic Track Liner and two hydraulic rams mounted on wheelbarrow type frame that can easily be operated or transported by one man.

Lower right—Model H-O Hydraulic pump, light weight, hand operated, that will supply power for one (as shown) or two rams. Ideal for small gangs.

RTW HYDRAULIC TRACK LINER

More track lined per hour with Minimum effort and expense

The RTW Hydraulic Track Liner—Model P-O—was devised and designed by railroad engineers thoroughly familiar with maintenance of way problems.

A light rigid self contained attachment with double flanged rollers used with the P-O Track Liner adjusts to any height or weight of rail. It supports a portable air-cooled 8 horsepower gasoline driven engine. This power plant can be used with two hydraulic rams for lining thru switches, road crossings, etc., as well as supplying power for the attachment for out-of-face lining. Its light weight and portability reduces operator fatigue.

This equipment is also available mounted on a wheelbarrow type frame that can be transported by one man for use in heavy traffic areas.

The hand operated hydraulic pump, available with either one or two hydraulic rams, is ideal for spot lining with small gangs.

The interchangeable units of these highly portable power operated Hydraulic Track Liner combinations afford a smaller force, the equipment necessary to do the work that normally would require heavier oversized machines and a large crew.

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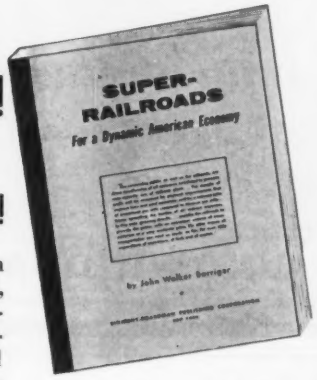

The future of American railroads is unlimited, says author John Barriger. This great potential will be fulfilled when professional railway men understand the vast opportunities ahead.

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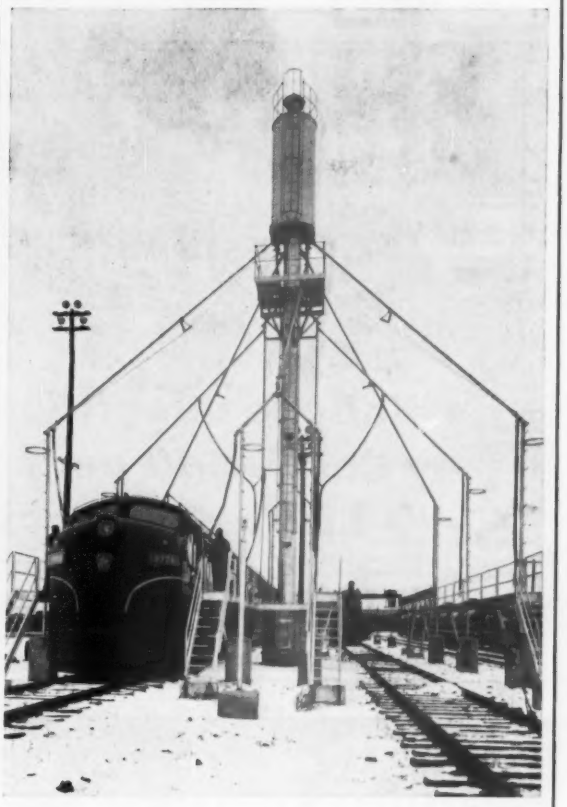
Sand Handling Plants for Diesel Locomotives



The Pennsylvania Railroad awarded a contract to the Ross and White Company for the design, equipment and field erection including foundations for a superb 10 ton capacity diesel sanding facility at Toledo, Ohio.

Top sand boxes on diesel switchers, side boxes on road locomotives are sanded at one spotting on two tracks with 2½" dia. pipe and rubber hose using our No. 4 encased "B&M" diesel sand valves.

The Ross and White Company have furnished American railroads more of this type of plant than any other company, using the gravity method of sanding, which all railroads agree by far, is the best.

We will be pleased to furnish special designs to fit the railroad's track layouts and requirements, and reasonable prices covering same.

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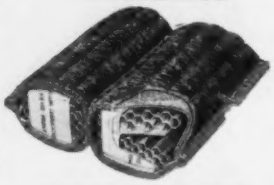

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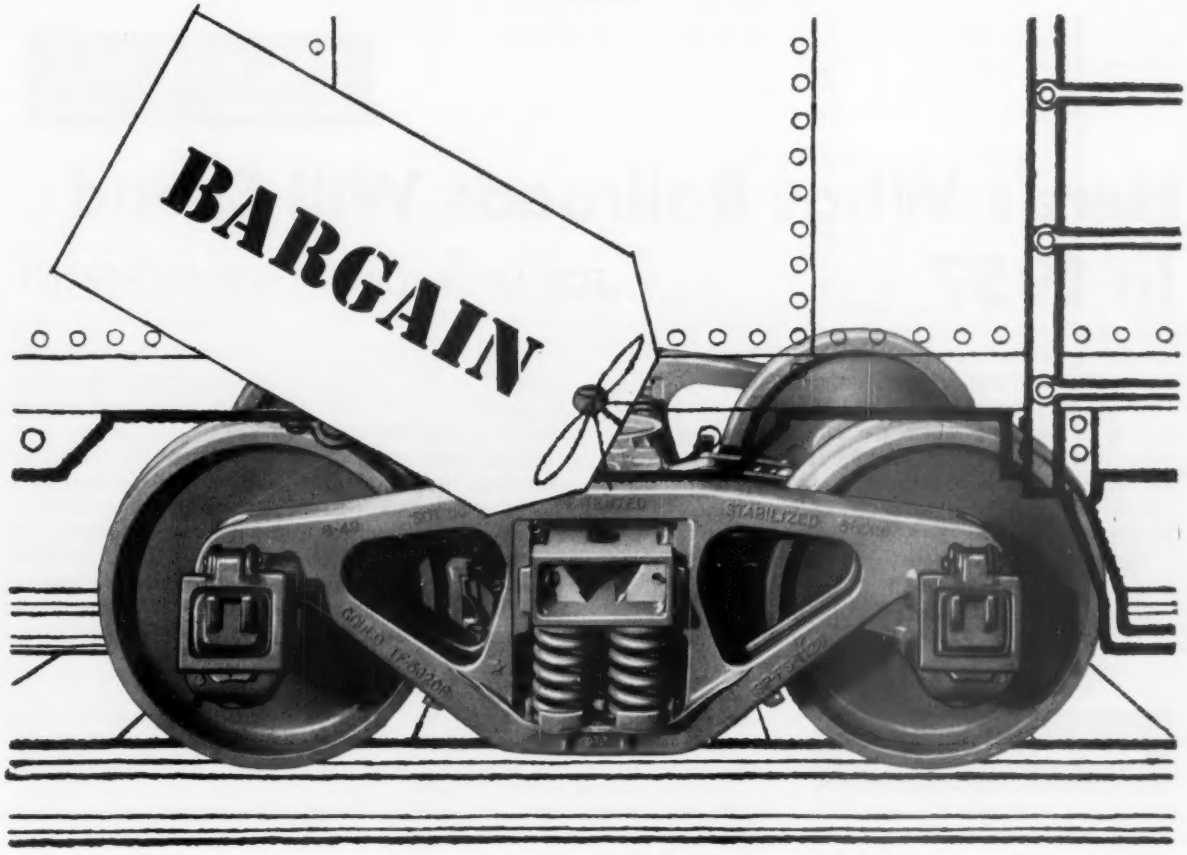

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RAILWAY AGE
The Industry's Newsweekly

Here's What Railroads Will Spend In 1957

...FOR UPGRADING THEIR PROPERTIES

Capital expenditures will be up in 1957 from 1956 levels. That fact seems clear from data furnished Railway Age by individual railroads. However, due to the variety of forms in which the railroads set up their plans, it is difficult to put one's finger on just how much this increase will be. Nevertheless, at least a 10% increase would seem to be probable over 1956's $1.3 billion.

One thing is most noteworthy in the reports from the carriers. More than half of them make a point of asserting that they are going to keep their percentage of bad orders low this year. Some roads declare that their bad order figure already is below 2%—and they intended to keep it there. And the reader will notice, in support of this statement, the rather substantial budgets some roads have made for upgrading their existing freight car fleets. No wonder supply firms like American Steel Foundries and National Malleable & Steel Castings look for 1957 to be better than 1956.

Estimates are subject to the condition, however, as everyone knows, that continued high demand for steel could slow down the railroads' maintenance and capital expenditures programs substantially.

Here are representative detailed spending plans:

Railway Outlook

Akron, Canton & Youngstown

Plans to lay five miles of new 115 lb **rail;** estimated cost $216,000. Expects to take delivery on one new 1,600-hp road switcher; cost $170,000.

Alton & Southern

About $50,000 will be spent in laying new **rail** this year. Still under study are some yard revisions. The **signaling** budget for the year calls for expenditures of $42,000.

Atchison, Topeka & Santa Fe

The **rail** laying program consists of installing 273 track miles of continuously welded rail. Corwith yard (Chicago) will be converted to a retarder hump operation.

The budget for **signals and communications** calls for $250,000 of automatic crossing gates and flashing light signals. Reverse signaling will be placed in service on the double-track line between Olathe, Kan., and Lebe, 67.9 mi. Microwave radio is scheduled for the Kansas City, Mo.-Topeka, Kan. line. Carrier equipment to be installed will improve telephone service between Los Angeles and Needles, Cal., as well as on the Amarillo, Tex.-Albuquerque, N. M., line. Thirty-five road locomotives and five cabooses will be equipped with radio, while yards at Carlsbad, N.M., and Mormon, Cal., will be "radioized." At Bakersfield, Cal., a radio repeater station will be constructed and the car inspectors will be equipped with radio packsets.

This road will put in service about 3,800 new **freight cars,** and will modernize 415 others. Included in the new cars to be acquired are 50 75-ft flats for piggyback service, 25 mechanical reefers and 250 box cars with roller bearings and DF loaders. (Fifty of the box cars will be insulated.)

It also will acquire 16 1,750-hp diesel **road switchers** and six 1,200-hp switchers.

Baltimore & Ohio

Total expenditures for **rail** in 1957 are estimated at about $10,680,000. New rail to be laid is about 68,000 net tons—cost, $7,480,000. Relay rail installed will be 80,000 tons, and the expenditure will be $3,200,000.

About $13 million will be spent for improving the classification **yard** at Cumberland, Md. Automatic car retarders will be placed on the westbound hump. About $1,382,000 will be spent for new **signaling.** This includes $382,000 for CTC between Mitchell, Ind., and Washington. Reverse signaling in the Baltimore area and on the Cumberland division will take most of the rest of the budget.

More than $10.8 million will be spent for rebuilding 1,500 hoppers and 434 gondolas. Work will be done in the B&O shops at DuBois, Pa. New **cars** to be acquired number 1,000, at a cost of about $9.1 million—comprising 800 box cars and 200 covered hoppers.

By J. W. MILLIKEN
Contributing Editor

Central of Georgia

Budget for **rail** replacement calls for laying 40 track miles of new 115-lb steel and 13.5 miles of 90-lb relay rail on secondary main lines. Total outlay, about $1,915,000.

Plans for upgrading the existing **freight car** fleet call for expenditure of about $552,000. Heavy repairs will be given to 50 50-ton flats, while 23 50-ton hoppers and 135 70-ton hoppers will be rebuilt. The road expects to take delivery of $5,777,000 of new freight equipment consisting of 500 box cars; 250 hoppers; and five drop-end gondolas.

Chesapeake & Ohio

About 33,000 net tons of new **rail** and 19,300 tons of relay steel will be laid in replacement. Cost of this program is estimated at $5 million.

The **signaling and communications** budget calls for the following expenditures: $5.1 million for more than 100 miles of CTC, new interlockings, remote control and passing track changes; $860,000 for expansion of yard and terminal communications facilities at Richmond, Va., Stevens, Ky., Cincinnati and Columbus, Ohio, and Ludington, Mich.; $310,000 for 1,680 miles of telephone channels and duplex Teletype communication facilities, Richmond, Va. to Huntington, W. Va.; $740,000 for train radio, including equipping 100 locomotives, a number of cabooses, plus base stations

from Toledo, Ohio, to Parsons, and Orange, Va., to Alexandria.

Spending for improving **yards,** coal handling facilities, etc., is estimated at $25,990,000. About $13.4 million will be spent at Newport News, Va. Another $5.5 million is the estimated cost of expanding the westbound manifest yard at Russell, Ky. Detroit and Grand Rapids terminal improvements call for spending $1.3 million.

About $3.4 million is the estimated cost of giving heavy repairs to 1,950 **freight cars,** including 1,076 box cars and 839 hoppers and gondolas. Additionally, the railroad has on order $72,743,000 worth of freight cars. Included are 7,905 hoppers, 1,000 box, and 500 70-ton gondolas. The C&O also has options on 100 diesel units—cost, $19 million.

Chicago, Milwaukee, St. Paul & Pacific

Budget calls for expenditure of $6,757,000 for roadway, over and above ordinary maintenance. This includes laying 20,000 net tons of new **rail** and 15,000 net tons of relay rail. Also in the budget are construction of a refrigeration ice house and installation of a car icing machine at Othello, Wash. The road expects to acquire during the year 1,000 50-ft box **cars,** 100 70-ton hoppers, and 50 50-ton Airslide covered hoppers.

Chicago, Rock Island & Pacific

At Dallas, will expand its **yard** and build a new freighthouse at a cost of about $860,000. The largest item in the **signaling** budget is $364,167 for crossing signal projects. Second most important item is $167,700 for automatic speed control on the hump at the Silvis, Ill., yard. At a cost of about $83,000, the Rock Island plans to install **radio** on 18 freight diesels, 25 passenger diesels and 14 cabooses. Another planned expenditure is $79,500 for 12 base radio stations and dispatchers' main-line radio control.

Almost $1.6 million will be spent for heavy repairs and rebuilding of more than 2,400 freight **cars.** Another $726,000 will go for repairs to 84 passenger train cars. The road expects to take delivery on about $6.5 million of new freight equipment, consisting of 600 hoppers and 200 gondolas. It also will lease 200 hoppers, 50 Airslide covered hoppers and 50 insulated "DF" cars, and probably will equip 15 flat cars for use in piggyback service.

This road plans to order during the year 800 box cars and 10 **diesel** units —total cost $9.5 million.

Clinchfield

Estimated budget for laying **rail** totals $1,751,000. For this amount 32 miles of new 132-lb steel will be installed in addition to 20 miles of 115-lb relay rail. Train **radio** will be installed on some equipment not already equipped, at a cost of $39,000. Heavy repair and overhauling of 1,300 freight **cars** calls for expenditures of approximately $1.5 million. The road hopes to take delivery on $2,150,000 of new hoppers (250 units).

Denver & Rio Grande Western

New **rail** program calls for laying 11.66 miles of 106-lb steel at an estimated cost of $455,779. Crossing protection and new **signaling** to be put in service in the Salt Lake City area will require outlays of about $101,000.

Car **repair** program contemplates general or heavy repairs to 26 passenger cars and 695 freight cars. Cost on the passenger equipment is estimated at $117,650, on the freight cars (300 box and 395 gondolas), $412,185.

This road expects to acquire 450 new **freight cars.** Outlay will be about $4,292,000. Two hundred of the cars will be box, with metal floors, 200 will be hoppers and 50, 70-ton covered hoppers. It also plans to put in service 10 1,750-hp **diesel** road switchers.

Erie

This road will lay 67 miles of new **rail** and 50 miles of secondhand steel. Expenditures will be $2,215,000. About $2,479,000 will be spent for other construction projects, including upgrading New York pier facilities ($1.2 million) and revisions to the eastbound classification yard at Hornell, N.Y., ($944,000).

Expenditures for new **signaling** are expected to total about $1,162,000. Among the major items are $195,000 for single-tracking the line between Middletown, N. Y., and Goshen; $496,775 for the third stage of single-tracking the Marion division; and $168,800 for remote-controlling three interlockings in the Youngstown area. Flasher lights for grade crossings will cost about $190,000.

The Erie will rebuild or give heavy repairs to about 1,326 freight **cars** and 102 passenger cars—total cost about $1,055,000. Additionally it expects to order 750 box cars and 250 gondolas during the year. Estimated expenditures for this equipment, $10,887,200. The road also expects to order 10 scows and 1 carfloat for its New York harbor operations—cost, $755,000. Plans provide for another 100 trailers in its piggyback service.

Florida East Coast

Estimated cost of the **rail** laying program is $300,000 to $400,000. New automatic **crossing protection** will necessitate expenditures of approximately $300,000. Ordered in 1956 for '57 delivery are 200 **gondolas** and 10 **diesel** units. Outlay for this equipment will be about $3,250,000.

Gulf, Mobile & Ohio

This road expects to lay 50 miles of new **rail** and 50 miles of secondhand rail. It will install approximately 130 miles of **CTC,** and probably will construct two base **radio** stations.

Plans call for rebuilding—or giving heavy repairs to—2,400 **freight cars.** Receipt of 100 covered hoppers, 250 50 ft box cars and 250 pulpwood cars is anticipated.

Illinois Central

The roadway budget includes $6,751,000 for 150 track miles of new **rail,** and $2,320,000 for new and extended yard and side tracks. A large part of the $1,437,000 for buildings will go for diesel facilities.

This road will build 2,000 new **box cars** at its Centralia, Ill., shops, at a cost of $13,000,000. Another $3,165,000 has been earmarked for 200 covered hoppers, 110 flats and 50 cabooses. Also it will equip 150 cars for specialty loading—$525,000.

The budget calls for the acquisition of 74 **diesel** locomotive units at a cost of $13,820,000. Four will be passenger type while the other 70 will be general purpose power.

Illinois Terminal

At a cost of $250,000 this road expects to lay 12 miles of new **rail.** It also will modernize its Alton, Ill., locomotive and car shops, for which expenditures will be about $200,000. The IT will spend about $850,000 to rebuild 330 freight **cars.**

Lehigh & Hudson River

Plans call for laying about 500 tons of new 131-1 lb **rail** this year.

Lehigh & New England

This road will lay approximately six miles of new **rail** at an estimated cost of $217,500. About $423,000 will be spent for heavy repairs to 150 **box cars,** 150 hoppers and 24 low side gondolas. Another $3,440,000 is being laid out for 400 covered hoppers, now on order to be delivered this year.

Long Island

This line will install 3,200 tons of new **rail** and 3,500 tons of relay rail at a cost of about $600,000. It expects to rehabilitate 100 **passenger cars**—expenditures for this will be "over $2 million."

Plans call for spending $300,000 for highway **grade crossing protection** and $570,000 for reverse **signaling.**

Louisville & Nashville

About 40,000 tons of new 132-lb **rail** will be laid, and $1.7 million will be spent to extend **CTC** to another division of the railroads.

On order are 2,950 freight **cars** on which delivery is expected this year. Cost, about $27 million.

Four more **diesel** units are expected early in the year, completing L&N's current dieselization program.

Maine Central

About 9.6 track miles of new 115-lb **rail** will be laid, along with 8.4 miles of 100-lb relay steel. Total cost $423,200.

The road probably will order 200 box **cars,** for which the outlay will be about $1.6 million.

Minneapolis & St. Louis

This road's budget calls for new **rail** to be laid in 9.72 miles of track. The diesel repair shop at Marshalltown, Iowa, will be converted to a modern car **shop.** A new interlocking for a double crossing with the Milwaukee at Albert Lea, Minn., is the main item in the **signaling** budget.

About $170,000 is the estimated expenditure for heavy repairs to 294 freight **cars.** The M&StL expects to take delivery on 10 "Compartmentizer"—equipped box cars, 250 hoppers and 100 covered hoppers. Six "FT" type **diesel** units will be remanufactured and made GP-9's.

Missouri Pacific

Of about 130 miles of new **rail** scheduled for 1957, 56 miles will be the 132-lb section, while 74 miles will be 115-lb steel. Part of the work on the new hump-retarder yard at Kansas City will be completed. Total cost will be about $11.5 million.

Programmed heavy and general repairs to **freight cars** call for 5,500 cars going through the shops. Also the MP expects to take delivery on about 2,100 new freight cars, whose cost will be about $16.3 million. General American will deliver 100 70-ton Air Slide covered hoppers. The remainder of the cars will be built by the road's DeSoto, Mo., shops—900 70-ton gondolas; 100 50-ton box cars with 15-ft doors; 800 50-ton box with 8-ft doors, and 200 70-ton pulpwood cars.

Norfolk & Western

Maintenance of way budget calls for laying of 33,000 tons of new **rail** and 12,500 tons of relay steel. Cost of the former will be about $3,650,000. and of the latter, $650,000. Expenditures for **yard** revision projects will run to about $1 million.

The major capital outlay in the signaling and communications departments will be $2 million for **CTC.**

Heavy repairs to 444 **freight cars** will cost about $1,150,000. The approximate cost of about 5,774 freight cars will be $45,148,000.

Northern Pacific

Major items in the maintenance of way budget are: $4,795,700 for more than 94 miles of new **rail;** $679,540 for 74 miles of relay rail; $284,000 for new **yard** tracks at Missoula, Mont. Approximately 98 miles of **CTC,** it is estimated, will cost $1,464,000, while $402,000 will be spent for new **radio** installations and improving the railroad's telephone system.

Programmed rebuilding and heavy repair of **freight cars** (3,910) calls for expenditures of about $2,942,000. New freight and passenger cars to be received during the year are estimated to cost more than $15,386,000. Outstanding in the freight car deliveries will be 824 double-door 50-ft box cars, 50 50-ft DF refrigerator cars and 50 19,000-gal capacity tank cars. Passenger units included in the deliveries are six diners; one dome sleeper; and one dome coach.

The NP plans to order during the year 1,000 box cars and 25 Airslide covered hoppers. Expected outlay for this equipment is about $9,244,000. The road may also require 100 more flats for piggyback service before the year is out. Ten baggage cars will cost another $800,000. Also on the probable list are another 100 trailers for piggyback service.

Aiming for complete dieselization, the NP plans to order 60 **diesel** freight units, calling for expenditures of about $11 million.

Pennsylvania

Will lay 35,000 tons new **rail** and 53,000 tons of relay steel. Expense of this work will be about $18.9 million. Another $6.7 million will be spent in finishing Conway **yard,** while $966,000 will be the cost of a new car shop, yard and enginehouse improvements at Philadelphia. Another $2.1 million is for supporting yards for four new industrial plants.

Major items in the signal department budget are: $100,000 for a new interlocking at Cleveland; $400,000 for highway crossing protection; and $775,000 for cab signaling, Kiskiminetas, Pa., to Yellow Creek, Ohio.

For an expenditure of $35,275,000 the PRR will place in service 50 **diesel units and 2,652 freight cars.** The road will lease 25 trailers for use in its piggyback service.

Pittsburgh & Lake Erie

Budget for laying **rail** calls for expenditure of $529,000. About 2,500 gross tons of new 132-lb rail and 2,000 gross tons of 131-lb relay rail will be installed. The road will also build a new electronically controlled freight **yard** at East Youngstown, Ohio, at a cost of about $6.4 million.

Approximately $1.6 million will be spent to install **CTC** between West Aliquippa, Pa., and Wampum.

Heavy repairs will be given to 2,000 **box cars** and 1,000 70-ton gondolas. Outlay for this work will be about $3,020,000. The road also expects to take delivery on 1,970 hoppers, 909 gondolas and 500 covered hoppers. Total cost of this equipment will be about $27.3 million. (The covered hoppers are still to be orderd.)

Reading

Program for **rail** renewal calls for laying of 11,500 tons of steel, 5,500 tons of it new. Approximate cost will be $900,000. Completion of the project involving tieing in a new yard at Reading, Pa., with the Blandon Low Grade line is scheduled. Total expenditure will be about $3.4 million.

The budget for **signaling** and communications includes the following items: a start on consolidation of signal control facilities on Shamokin division; and highway crossing protection—$274,000.

About 1,500 freight **cars** will be given heavy repairs at a cost of $2.1 million. The road also expects to take delivery on 1,500 new freight cars, expenditures for which will total about $10,910,000. New cars comprise 100 covered hoppers; 400 gondolas; and 1,000 55-ton hoppers.

St. Louis Southwestern

The new **rail** program calls for an outlay of $962,970. Included in this are 14 miles of track to be laid with 132-lb rail and switch material, as well as 6 miles of 119-lb steel. Some 17 miles of relay rail also will be installed, at a cost of $248,510. About 8 miles of 112-lb material and 9 miles of 85-lb steel make up these totals.

During 1957 the road will upgrade 664 **freight cars.** Expenditures for this work will total more than $535,000. Additionally, the road will build 50 new wood rack cars at Pine Bluff, Ark., shops at a cost of about $507,000. Another 50 wood rack cars may be built later on in the year; and also 100 covered hopper cars for $933,250. The Cotton Belt also expects to take delivery on 950 other freight cars—cost $6,959,250. Fifty of these cars will be flats, 200, 70-ton gondolas and 700, 40-ft box.

(Continued on page 177)

Legislative Program Must Be Sold

Railroads will find climate on Capitol Hill much like it was last year when they got nothing in the way of legislation sought to improve the industry's competitive position. Repeal of transport taxes has top priority in 1957 program but rate-freedom program is still very much to the fore

Railway Outlook

The railroads are confronted with a big selling job as they undertake to get their present legislative program enacted by the new Congress.

For them, the climate of Capitol Hill remains pretty much like it was last year, when they got no further than making a sales pitch. In other words, this is another Congress under Democratic control, with most of the important positions in the same hands. Thus, prospects for enactment of the program appear quite as dim as they were last year—when the railroads got nothing of what they were after and actually took set-backs, such as the enactment, over their opposition, of legislation restricting the Interstate Commerce Commission's power to ban trip-leasing of motor trucks.

That the carriers are well aware of the job ahead is indicated by planning they have been doing. They have joined with other groups where mutual interests were involved, such as in the movement to repeal excise taxes on for-hire transportation; and the vice-president and general counsel of the Association of American Railroads, Thomas L. Preston, has held a series of conferences with chairmen of state railroad associations and legislative committees. These conferences were countrywide in scope, including meetings at New York, White Sulphur Springs, W. Va., Chicago, San Francisco, Colorado Springs, and New Orleans.

The Priorities

Top priority on this year's program is given to repeal of the transport excise taxes, but the rate freedom program, which had top priority last year, is still very much to the fore. The excise taxes are 3% on freight charges (4 cents per ton on coal) and 10% on passenger fares.

The rate-freedom program came out of the report of President Eisenhower's Cabinet Committee on Transport Policy and Organization, which was headed by Secretary of Commerce Weeks. It is designed to give railroads and common carriers generally more leeway to adjust competitive rates. Its specific provisions, called the 'three shall nots," would end the ICC's "fair-share-of-the-traffic" approach by prohibiting consideration of the effect of proposed rates on another mode of transportation—but the compensatory test would remain.

The railroad industry's presentation on the excise taxes has already been made—at hearings held last month by a House Ways and Means subcommittee. Five railroad presidents were on hand, joining in an appeal with other agencies of transportation, shippers and railroad labor organizations.

Slight Hope

Members of the subcommittee seemed favorably impressed with the presentation, but the repeal movement is still met by arguments to the effect that the government needs the revenue, and by calls for suggestions as to what other levies might be imposed to offset the revenue loss. Thus, prospects do not appear too good, although in the hearing's aftermath there was some slight hope that Congress might consider reducing the freight tax. There was no optimism about relief on the fare tax.

Another tax matter in which the railroads are interested is proposed legislation to give them a better break, for income-tax purposes, than they now have as a result of the adjustment for past accrued depreciation which was made when they converted from retirement to depreciation accounting some 15 years ago. The adjustment, which reduced the capital account, was agreed to after negotiations with the Bureau of Internal Revenue, and the bureau is now willing to go along on the modifications contemplated by the proposed legislation. Such an agreed-on proposal should have a good chance of enactment.

Taxes which support the Railroad Retirement System are also expected to come up for consideration. The Railway Labor Executives' Association promised to sponsor legislation this year to provide for financing the 10% increase in benefits which came out of legislation last year.

That enactment came after the House Ways and Means Committee refused to approve a more liberal proposal calling for a 15% increase in benefits and higher payroll taxes, the tax rise to be painless for the employees because it would have been more than offset by provisions excluding from their taxable income the whole amount of the payroll taxes paid by them.

Higher Pension Taxes

While the railroads' half of the pension-plan tax is a deductible expense, that has the effect of offsetting for them less than half of any rise in the levy. In approving the 10% liberalizer enacted last year, President Eisenhower issued a statement saying it was "imperative" that interested congressional committees and the railroad labor organizations make good on the agreement to sponsor financing legislation. The President also expressed his opposition to any plan whereby payroll taxes paid by the employees would be excluded from their taxable income.

Thus, the railroads seem to have a payroll tax increase ahead of them. And it may be enough to support another increase in benefits as well as the 10% provided last year. On the other hand, the new legislation may be confined to financing the

By WALTER J. TAFT
Washington Editor

10% if the labor unions are unable to put over their plan for making the employee payments deductible.

The "three shall nots" would add to the Interstate Commerce Act's rate-making rule provisions stipulating that, when the ICC reviews competitive rates proposed by one form of transportation, it could not consider: (1) the effect of such rates on the traffic of any other mode of transportation; (2) the relation of such rates to the rates of any other mode of transportation; (3) whether such rates are lower than necessary to meet the competition. While the Cabinet Committee made many other recommendations which the railroads support in principle, they concentrated on the "shall nots" as the "heart" of the rate-freedom program and thus of "greater immediate importance" than the other proposals in the report.

That position was taken at hearings held before a House Interstate Commerce subcommittee, which was headed by Representative Harris, Democrat of Arkansas, who is to become chairman of the full committee, succeeding the late Representative Priest of Tennessee. Railroad plans for the present session contemplate a like approach.

When its hearings closed last year, the House committee took no action beyond instructing its staff to digest the record. That digest was scheduled to be finished sometime this month.

Senate Side

On the Senate side, no hearings were held last year, and the key personnel of that body's Interstate Commerce Committee has not changed. Senator Magnuson, Democrat of Washington, is slated to remain as the committee's chairman, and Senator Smathers, Democrat of Florida, will continue as chairman of the subcommittee which has the rate-freedom proposals on its docket. Both have talked of holding hearings on the proposals, a recent Smathers statement having been that, in any such hearing, "it should be foremost in the minds of all that consideration is being given to wise regulatory standards for all carriers involved, not legislative action favoring one group or another."

Whatever may be done in the way of further hearings, however, any follow-through to the framing of rate-freedom legislation will encounter the same opposition that arose last year. Then it was opposed by the ICC, the trucking industry and water carriers, although it was favored by shipper interests, including the National Industrial Traffic League. This year it might even get into such shape that the railroads would turn against it.

That could happen if the proposed legislation were written to apply the "shall nots" on an intra-industry basis as well as on the inter-agency basis. That was suggested at last year's House hearings.

As to the other Cabinet Committee recommendations, the railroads still support the "purposes and objectives" of proposals that "for-hire carriage performed under the guise or subterfuge of private carriage be restrained or regulated"; that the definition of contract carriers be sharpened and that such carriers be required to file minimum rates actually charged; and that the act's provisions exempting water carriers of commodities in bulk be repealed. The ICC also favors these proposals, as it does the recommendation that it be given authority to override state commissions to permit abandonment of unprofitable services.

As to the latter, which would be opposed by the railroad labor organizations, the railroad position is that it might well be deferred pending completion of the commission's current investigation of the passenger service and its deficit. Meanwhile, the commission determined last year that it does not now have the authority contemplated by this recommendation, as some contended.

Fourth Section

While they still favor complete repeal of the fourth section, the railroads will not urge the present Congress to go that far. They are supporting the ICC plan to make the section less restrictive. The commission proposal would amend the section to permit railroads having circuitous routes to meet competition of direct routes by publishing rates involving fourth section "departures" without prior approval of the commission. That would limit the commission's fourth-section power to the matter of relief over direct routes.

Proposals for complete repeal of those provisions of Section 22 which authorize special rates for government agencies are still opposed by the railroads. This position was taken last year, when the AAR board of directors went on record in opposition to the repealer sponsored by the late Representative Hinshaw of California, unless it were amended in a way which would have transformed it from a repealer into a mere modifier of the section.

This opposition to ending their authority to grant special rates to government agencies is, of course, consistent with the railroads' support of the Cabinet Committee's rate-freedom proposals. Section 22, which is permissive, affords carriers rate freedom to compete for government traffic.

Through-Routes Proposal

Congress will find the railroad industry divided over a proposal to amend the act's through-routes provisions which it will get from the American Short Line Railroad Association. The proposal, which was opposed by the AAR when it came up last year, would modify Section 15(3) to incorporate therein the prohibitions that through routes shall not be canceled nor rendered inoperative by new or revised joint rates, unless such arrangements are approved by the ICC after hearing.

On the "rendered inoperative" matter, short lines complain that this has been accomplished, without actually canceling routes, by the device of publishing rates, subject to routing restrictions, which are lower than open-routing rates on the same traffic. The short lines have previously got through-routes legislation, and they may well do it again.

Legislative recommendations made by the ICC in its annual report will also be before the Congress. Last year the commission made 39 such recommendations, most of them repeaters from previous annual reports or other commission presentations to Congress. This year's report was expected to be on the same pattern, stressing again the commission's special concern about the growth of exempt transportation.

Finally, the railroads may expect reintroduction of various proposals which they have opposed in the past. These include bills to extend water carrier subsidies to domestic operators in the coastwise and intercoastal trades, and to raise parcel post size and weight limits.

1957 Buying—Over $4 Billion?

Railroad expenditures and purchases of operating equipment and supplies, together, in 1957 could total more than $4 billion. However, tight money, steel shortages and a number of other factors could combine to keep such expenditures below this figure. Rising material costs are expected to account for a sizable rise in the dollar volume of railroad buying. Also, despite the large backlog of freight cars still on order, more than 40,000 cars probably will be ordered this year.

Railway Outlook

Total railroad purchases, including capital expenditures, in 1957 should run to between four and four and a half billion dollars. Included in this figure, in addition to capital expenditures, are purchases of materials, supplies and fuel, for day to day operations. Such buying, should it materialize, will be almost $1 billion more than comparable railroad spending in 1956.

A spread of almost a half billion dollars in estimates can hardly be called precise forecasting. However, there are so many "ifs" about 1957 that precision, at this point, is virtually impossible. For example, what about freight rate increases, possible steel shortages and allocations, the tight money supply, material price increases? True, late last month the Interstate Commerce Commission did grant some railroads a part of the freight increase they are seeking. But the carriers contend it isn't enough.

As everyone knows, money is tight, i.e., the cost of borrowing is high, and going up. Because of this factor, plus the uncertainty as to the outcome of the Ex Parte 206 rate case, some of the poorer roads especially may decide to stay out of the money market, except when it is necessary to buy absolutely "must" items.

Furthermore, there's the tight steel supply, which condition undoubtedly will continue at least through the first half of this year. Steel may be so scarce that allocations may be made by the government. To what extent will this steel supply situation affect the deliveries of freight cars already on order? And still further, a steel supply which remains tight all year could encourage the carriers to put off ordering equipment which they acknowledge is needed. Prices of materials, which have been rising rather steeply of late, also could have a profound effect on purchase plans. Considering all these factors, only one generalization can be made: if the carriers are "in the chips," relatively speaking, they'll be active in the buying market.

Between January 1956 and October, the average cost of all items in the price index compiled by the AAR Bureau of Railway Economics increased by more than 6%. In large part this increase reflected substantial rises in prices on iron and steel products and fuel—over 6% on fuel and almost 19% on iron and steel products. Presently, it does not look as if these price changes will be followed by equally large ones during 1957. However, a lot of small rises probably are in the offing, which will increase the carriers' supplies bill substantially.

It seems likely that orders for new freight cars during 1957 will be a little more numerous than in 1956. There's no doubt the cars are needed. But the conditions discussed above will have some effect on car orders, too. Even with tight money and steel in short supply, however, upward of 40,000 cars probably will be ordered this year. Prominent among the car types in these orders will be special flats for piggyback service, covered hoppers, tanks and standard hoppers.

If freight car deliveries are no better this year than last, 1957 orders on top of the backlog of nearly 120,000 at the end of 1956 should enable car builders to have a very good 1958 to look forward to. Orders for 1956 came to about 41,085, while deliveries totaled 66,580.

By J. W. MILLIKEN
Contributing Editor

Index of Unit Prices

RAILWAY MATERIALS AND SUPPLIES

Material	*Jan. 1955*	*Jan. 1956*	*Oct. 1956*
Fuel	111.1	112.7	119.0
Forest Products	123.7	130.7	132.9
Iron & Steel Products	146.7	158.4	173.3
Miscellaneous Products	124.3	133.2	133.8
Total (excl. fuel)	133.4	143.2	149.5
Total (incl. fuel)	125.1	132.0	138.3

Source: AAR Bureau of Railway Economics (1947-1949 = 100)

Better Freight Cars—Not Enough

Car shortages dissatisfy the shippers—Substantial backlog of freight-car orders persists, but deliveries continue unsatisfactory

Railway Outlook

The year was notable for the tremendous increase in the volume of traffic moved in trailers on flat cars and for the number of new types of road-rail transfer equipment brought to the point of use during the year. Many additional roads have inaugurated "piggyback" service and the network of routes has been spread by the expansion of services in interchange.

Piggyback service is now available from the Atlantic coast to the Southwest, from the Northwest to the Southwest, and from the Middlewest to the Pacific coast. The growth of traffic was set back in March when Ex Parte 196 rates went into effect but by fall it had fully recovered. The volume of piggyback traffic was bigger in October than in any previous month since this service was started. Forty railroads were then moving 4,000 cars of trailer traffic a week.

With the demand for equipment which the expanding trend of the service created it is not surprising that during the year several different designs of cars, trailers and containers were brought out in which different methods of transferring between road and rail are employed. Among these are ACF Industries' four-wheel "Adapto" car, a Pullman-Standard four-wheel flat car, the Missouri Pacific design of trailer with detachable wheels which may be loaded on either flat cars or gondolas, the North American Car Corporation cars and dry-ice refrigerator containers now in use in meat-distribution service, the long cars of Piggy Back, Inc., which accomodate two trailers, and the Chesapeake & Ohio "Railvan" which operates intact on both highway and railroad. Each of these schemes is offered as a solution of the problem of returning retail traffic to the rails on an economic basis. Some of them may also leave their mark on the design of freight cars used in mass transporation.

It is evident that the piggyback idea of putting loaded highway trailers back on the rails for the intercity part of the haul has started a movement which has already reached beyond the hauling of trailers on flat cars and may reach still further. It has already revived interest in the container idea which was the object of extensive physical development 30 or more years ago, but was poorly received by the industry, with prospects that it may now be more effectively utilized.

At least one of the developments related to it is also giving the color of reality to a dream of more than one responsible railroad officer. This is the use of a standard platform and trucks on which can be assembled a variety of bodies, each adapted to a particular type of lading, and which can be replaced when there is a change in demand. That is the Adapto car of ACF Industries, Inc.

The numerous ideas as to details of equipment and methods of organizing its use which the piggyback service has brought forth are evidence of the vitality of the movement to improve the economics of road-rail transfer. More schemes may be offered.

But the variety of designs and methods is creating a problem which will have to be faced sooner or later. That is the development of interchangeable methods of tiedown of trailers on cars and of securing containers on cars and trucks, as well some common type of facilities for effecting the transfers between cars and trucks. Interchange of flat cars and trailers between railroads is rapidly increasing. So far as the car is concerned, tiedowns for trailers need not be identical. The method of attachment to the trailers, however, should preferably require no special fixtures. If these are considered desirable or necessary, however, some uniformity of location and type will be desirable.

As interchange multiplies, container cars should be able to accept all containers and all containers should fit one truck standard. Without some such program of ultimate standardization, interchange will be limited to a relative few fixed routes where the participating roads on each route use equipment and transfer facilities of one type. The differences in methods of road-rail transfer among the container systems offered 30 years ago constituted one of the handicaps which prevented their adoption.

News in Box Cars

The Canadian National has developed a double-deck automobile transporter which was ready for revenue service at the end of the year. This car is 78 ft 2 in. long, coupled. It is loaded through the ends and has a capacity of eight automobiles in all but the top price range, four on each deck. There are no side doors. This is a box car in which, unlike the automobile box car, there is no way to make it available for other lading.

The Seaboard finds that side doors 20 ft wide speed the loading and unloading of lumber with power trucks. This is another encroachment in the field of the standard box car in the interest of economy for the shipper.

The continuous shortage of box cars throughout the year directed the attention of the railroads to emergency methods of upgrading box cars, particularly for handling the grain crop. Several of the materials being used, in addition to their effectiveness in the emergency, promise to provide a car interior which will withstand rough loading and be ready for Class A loading with no more attention than cleaning. Finding materials and methods which will provide permanently smooth and non-absorptive interior surfaces will pay a generous return on the cost of meeting the emergency which focused attention on them.

By C. B. PECK
Contributing Editor

The story of freight-car supply during 1956 is not new. It is the same old tale which has been told annually every year during and since World War II: car shortages—box cars, hopper cars, gondolas, flats. If there is anything new in the 1956 situation it is that the shortages were less seasonal than during the earlier years; prevailing more uniformly, that is, throughout the year.

The trend in the supply of freight cars of the principal types, owned or leased and serviceable, during the first nine months is shown in the table. The increases are small and there was a decrease of more than 3,000 gondolas.

Between January 1 and October 1 box cars owned or leased increased by 7,515 and serviceable box cars, by only 4,635. The smallest average daily shortage of box cars was during the week of January 7; it amounted to 601. For only four weeks during the year, all in January and February, were shortages less than 2,000 cars daily. The largest shortages occurred during the four weeks after September 30 and ranged from 5,300 to 7,600.

The increase in the number of hopper cars owned or leased between January 1 and October 1 was only 1,369 cars, but serviceable cars increased by 7,220. There were shortages of less than 1,000 hopper cars during 18 weeks of the early months of the year. For the 13 weeks ended November 3 average daily shortages were over 2,000 cars. During this period, for the six weeks ended October 27, shortages averaged over 5,600—for the highest week, 6,829 cars.

During the same period gondolas owned or leased by Class I railroads increased by 3,222 cars and serviceable cars, by 3,348. Shortages were continuous. For the nine weeks of May and June they varied from 1,100 to nearly 1,900 and for the 11 weeks ended November 3, from 2,000 to nearly 5,300.

Covered hoppers owned or leased increased by 3,500 and serviceable cars, by 3,445. During only two weeks were there no shortages. Shortages averaged over 200 during 14 weeks and between 100 and 200 during an additional 15 weeks.

Flat cars owned or leased had increased by 730 on October 1 and serviceable cars, by 344. There were shortages during every week of the year. During eight weeks they amounted to over 200 cars and during another six weeks, they ran between 100 and 200 cars.

Class I ownership of all types of freight cars increased by 9,586 cars during the nine months and serviceable cars, by 10,551. The smallest aggregate shortage was 1,105 during the first week of the year. With the exception of one week, shortages during the 10 weeks ended on November 3 ran from 10,000 to 19,000. To have eliminated all freight-car shortages during 1956 would have required an additional Class I ownership of between 75,000 and 100,000 freight cars of all types. This would have comprised in part about 50,000 box cars, 20,000 hoppers and 15,000 gondolas.

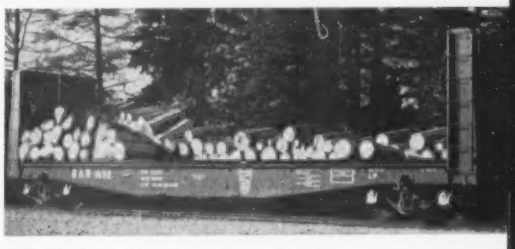
In defense of the action of the railroads to meet this situation, attention is called to the backlog of freight-car orders with which 1956 opened—147,200 cars. While orders failed to keep ahead of deliveries during the year, the backlog was still 122,250 on November 1.

Like car shortages, this disappointing increase in the car supply is an old story. The railroads come into the market only when the need for cars is desperate. That is the time when the demand for steel exceeds the supply and the railroads have to wait. When will they change their buying habits and deal in a buyers' market, when materials and labor are in good supply and, of course, when traffic is light? Probably not until they are earning better than 4 or 4½ per cent on their depreciated valuation. But, in the meantime, car shortages continue and the proportion of total traffic handled by the railroads continues to decline.

How is this vicious downward spiral to be broken? If it is not done by management within the industry, it will ultimately be done politically, at best with a further shrinkage of the field within which management is free to exercise discretion and at worst with the end of private ownership of railroads in the United States.

FIRST of 75,000—Workmen putting the finishing touches on Pullman Standard's PS-1 preparatory to showing it at the 1947 Atlantic City Convention. This design introduced a new era in standard freight car design and other P-S standardized designs have followed in the ensuing 10 years.

ACF "ADAPTO," here shown as a two-compartment box car, uses a basic car with specially designed cargo units to fit almost any shipper's requirements.



TYPICAL of the trend to special purpose cars are these pulpwood cars built for the BAR by Magor Car.

Freight Car Supply During 1956

CLASS I RAILWAYS

Car types	Owned or leased Jan.1,1956	Owned or leased Oct.1,1956	Increase or decrease	Serviceable Jan.1,1956	Serviceable Oct.1,1956	Increase or decrease
All box	716,845	724,036	7,515	691,426	696,111	4,685
Hoppers	505,338	506,707	1,369	480,000	487,280	7,220
Gondolas	280,306	277,084	—3,222	265,811	262,463	—3,348
Covered hoppers	41,756	45,286	3,530	41,198	44,653	3,455
Flat cars	48,376	49,106	730	46,666	47,010	344
All freight cars	1,694,097	1,703,683	9,586	1,622,716	1,633,267	10,551

COMMUNICATIONS

1956—Microwave and carrier made great strides, as did television and car reporting. Automatic switching for relaying of car reports at major offices was perfected on two roads.

1957—Greater role of communications system in data processing will be main emphasis for the coming year. Many roads will have system-wide automatic telephone installations.

Railway Outlook

A four-year pause in railroad microwave development was broken last year by four roads which made installations or had work under way. Three (Southern, Santa Fe, and Pacific Great Eastern) broke into virgin territory, that is, their installations of this multichannel, line-of-sight communication facility were made where pole lines are non-existent. The other road, the Southern Pacific, installed such a system in the rugged Cascade mountains in northern California. This microwave is expected to eliminate outages due to sleet and snow storms breaking line wires. After the microwave is fully in service, existing signal and communications pole lines are to be removed.

The Pacific Great Eastern is installing a 27-mile microwave link north from Vancouver, B.C. When this is completed, a 250-mile link is to be built at the northern end of the road, and finally, the intervening 400 miles will be equipped, so that the railroad's entire communications, including telephone and printing telegraph, will be handled by microwave.

Future of Microwave

The Santa Fe's microwave installation, now under way, will provide telephone service from a branch to the main line near San Bernardino, Cal. It was more economical to install microwave than to build a pole line along the 30-mile branch. Three Southern subsidiaries are installing microwave between Valdosta and Adel, Ga., and Live Oak, Fla. This system will provide telephone and printer service between seven offices.

For 1957 and beyond, several more microwave installations are in the offing. The Rock Island, for example, has completed surveys for a 380-mile system between Herington, Kan., and Des Moines, Iowa. Several other railroads are considering microwave systems, at least to the extent that preliminary surveys have been made to determine possible sight paths and repeater station locations. Where pole lines have to be rebuilt, the installation of microwave might well prove economically justified.

Because of its large circuit carrying capacity (up to 120 voice channels, each channel capable of handling up to 18 telegraph or printer circuits), microwave offers much for roads entering the "automation era" with car reporting and data processing systems.

Circuits "Stacked" by Carrier

To get more work out of existing line wires, railroad communications departments are literally stacking circuits, one on top of the other, by installing carrier equipment. This carrier method of "getting the most out of the least" is being applied with vigor in telephone and printing telegraph service. Carrier in 1956 enabled the Rock Island to remove two crossarms full of wire, with the exception of two pairs, on the pole line between Liberal, Kan., and Tucumcari, N.M., 204 miles.

A carrier installation was more economical than stringing additional line wires when the Great Northern recently moved dispatchers from Spokane to Seattle, in a consolidation of divisions. Carrier's future is excellent. Many roads plan to install twice as much carrier in the next five years as they did in the last five years, which bodes well for 1957.

Better Pole Lines

"Now that we're putting everything on one wire pair, thanks to carrier, that pair had better stay up, because it's mighty important." Thus spoke a railroad man not long ago. New developments in 1956 foreshadow better pole lines with less maintenance. The fiber glass pole and crossarm, which made their debut last March, are rust proof, fire proof, and just about "proof" against everything. The 35-ft poles weigh 150 lb, about one-fourth as much as a wood pole. Although initial cost is more than for wood poles, the fiber glass pole should have a life span of 50 to 100 years.

A new glass insulator has been developed which will withstand hammering, or pounding from rifle bullets, without breaking. Thus with a 50-100 year pole and crossarm, and a shatter-proof glass insulator, pole line maintenance costs may well decline in the years ahead.

Wire developments hold great promise for the future of pole lines.

By ROBERT W. McKNIGHT
Associate Editor

The copper situation of recent years has stimulated a search for a substitute, and one of the most promising is aluminum. First used with a steel core, stranded aluminum has been used successfully by the Canadian National for regular communications service.

Recently, an aluminum alloy has been developed which has greater strength than the aluminum alone. The Rock Island has a test installation of this AAC wire, bare and stranded, in service for a dispatcher's circuit between Goodland, Kan., and Bethune, Colo., in one of its most severe sleet storm territories. Thus, the rebuilt pole lines of 1957 will be better, and new pole lines of future years will withstand the rigors of sleet, ice, winds and corrosion much better than those of the past.

Loudspeaker systems have kept pace with the general growth of communications on the railroads. During 1956, the Northern Pacific developed a centralized checking system, which provides flexibility of operations not heretofore obtainable. In four NP freighthouses, the callers working in the freight cars may use either a telephone or a loudspeaker when talking to the checker in the office. Thus the advantages of both types of communications are available: (1) quietness of the handset communications; (2) freedom of the hands when using the loudspeakers. Upgrading of existing freighthouses by installing new communications systems for centralized checking will continue at a rapid pace during 1957.

Look for more yard loudspeaker installations during 1957, especially with the construction of new retarder classification yards.

Television Extends Eyesight

Extensive testing continued during 1956 in providing yardmasters with general yard surveillance or with close-ups of "hot spots." One railroader has commented: "TV watches without coffee breaks or overtime pay, and doesn't complain about rain or snow."

At Chattanooga, Tenn., the Southern installed TV cameras at three yard entrances to "grab" car numbers, the receivers being in the yard office. Normally the clerk watches the receivers, talking the car numbers into a tape recorder. However, a permanent film record can be made of the train.

During 1957 the Belt Railway of Chicago, is going to install a system using TV and photographic techniques to "grab" car numbers of inbound trains. A camera is to be located at a yard entrance, and with the use of a "strobe" light, individual pictures will be made; one photo per car. This exposed film will pass through a developing tank, and within a few seconds, the fully developed film will be positioned in front of a TV camera. The TV system will transmit this film image two miles to a yard office for viewing by a clerk.

Because as many as four trains may enter the yard, one behind the other, the clerk will be able to remotely control the film transport so that after the fourth train has been photographed, he can "back up" the film to view the first train. Thus he may have a film record of several trains, and he can select any train in any order for viewing to obtain the car numbers.

One of the largest TV installations of 1956 (100 cameras and 96 receivers) is in Pennsylvania Station in New York, where the Pennsylvania is providing close-ups of space reservations to passengers and ticket sales clerks at the counters.

Grabbing car numbers will be many railroads' first choice for TV's job on their property. Expect to see more of the "roving eye" in 1957 on the railroads.

Radio Everywhere

Railroad radio, having completed ten years of growth (it didn't really "catch on" until 1946), will undoubtedly continue such growth in the next 10 years. Its ability to bring men "face to face," conquering time and distance, is its most valuable characteristic.

Therefore it was a "natural" to be applied to freight train service and yard operations. Next came dispatcher control of wayside stations, and during 1956 radio developments included transistorized walkie-talkies and adoption by the AAR Communications Section of the single unit radio set providing another step toward the goal of standardization.

Next year will be a repeat of the last few years, as far as radio's growth is concerned. More roads will install radio on locomotives, cabooses, supervisor's automobiles, work equipment, and in wayside offices. Most railroads have radio in major yards and in freight train service. Many have complete systems including dispatcher control of wayside stations. You can expect 1957 to be another year of intensive radio installations, and also for further usage in new fields only partially explored. The maintenance-of-way field is one of the most promising, mainly because of the time savings which result in more working time for the equipment and men.

As for new developments, expect to see more use of transistors. Development work is now under way on radio power supply on locomotives, and transistor power supplies may be "just around the corner." All in all, 1957 should be another year of progress and growth for railroad radio.

Printer Service Expands

To meet the growing demand for freight car location information, the nation's railroads are rapidly installing car reporting systems. Many have such complete systems in service, and 1956 witnessed more roads nearing their goals. The North Western and Milwaukee tied in with the Union Pacific-Southern Pacific car reporting systems so that complete information is available to all concerning cars moving between Chicago and the Pacific Coast.

The New York Central, also in 1956, completed its mechanized car reporting system, a feature being the automatic switching of consists from incoming to outgoing lines at four major service bureaus. The Rock Island has just completed installation of a "cross-office" switching system, in its general telegraph office in Chicago, which automatically relays incoming train consists to their proper outgoing circuits.

The biggest future for communications is a tie-in with data processing. Some dozen railroads in the U.S. and Canada have ordered giant "brains" or digital computers as an integral part of data processing systems. These "brains" will give management the kind of integrated information it needs at incredibly fast speed—provided management also sees to it that the communications network has the speed and capacity to funnel in and distribute the information which the electronic impulses digest, reassemble and grind out. The indispensable preparation to the full use of data processing equipment is expansion and refinement of a railroad's communication system.

Patterns Changing in M/W Field

MORE WORK. Several types of heavy maintenance work declined in 1956, but the total expenditures held steady. A Railway Age year-end survey indicates that the railroads as a whole are planning heavier work programs this year.

MORE MACHINES. Record purchases of work equipment in the face of relatively stable maintenance programs point to the conclusion that machines are taking over a greater proportion of the work done.

NEW PRACTICES. To make these advances possible basic changes are taking place in maintenance-of-way organizations and practices.

Railway Outlook

Here are a couple of matters of more than ordinary significance:

1. Two major indices of track maintenance—crosstie and rail renewals—showed declines in 1956, bringing one of them to a record low and the other pretty close to it.

2. Dollar expenditures for work equipment to perform these and other maintenance tasks turned sharply upward—so sharply, in fact, as to reach a new high.

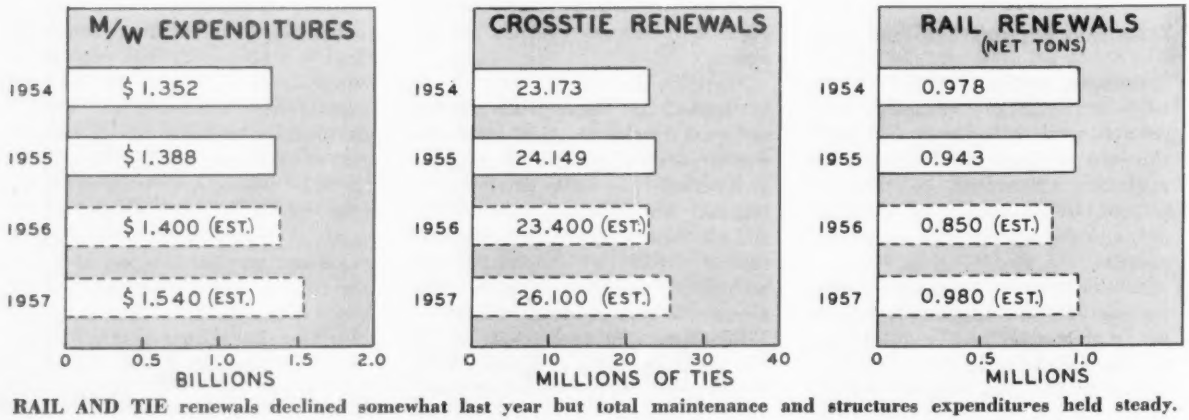
All sorts of implications can be deduced from these divergent trends. But the one that seems to stand out above all others is this: A greater proportion of track maintenance work is now being done with machinery than ever before. Many track men doubtless were already aware of this; the figures for 1956 merely confirm the impression—and in a most convincing fashion.

The complete picture of what has happened to rail and tie renewals, work equipment purchases and maintenance-of-way and structures expenditures as a whole—plus what is in prospect for 1957—is given by the charts.

For various reasons, some of which are readily apparent and others less so, the rail and tie-renewal programs of many railroads ran into difficulties in 1956. The railroads as a whole had budgeted larger programs in both categories than had actually been carried out in 1955. On the basis of figures furnished to this magazine by most Class I railroads it was estimated, at the close of 1955, that tie renewals would go up from 24.15 million in that year to 26 million in 1956. Actually, however, as it turned out, they declined to an estimated 23.4 million.

Rail renewals showed up even less favorably in comparison with expectations. Toward the end of 1955, there were strong indications that the 943,069 net tons of new rail laid in that year would be exceeded by a fairly decent margin in 1956. It was expected that the amount of new rail laid last year would exceed a million

By MERWIN H. DICK
Engineering Editor



RAIL AND TIE renewals declined somewhat last year but total maintenance and structures expenditures held steady.

The figures for rail and tie renewals, and work equipment purchases, are based on actual figures furnished to Railway Age by nearly all the Class I railroads. The official ICC figures for the first nine months of 1956 were used as a basis for estimating total maintenance of way and structures expenditures for the entire year. The indicated outlay for this purpose in 1957 is an estimate based on information furnished by the railroads indicating the extent of their maintenance programs for that year.

New Types Help Spur Equipment Buying . . .

SPIKER-NIPPER, which nips tie and drives four spikes simultaneously, represents trend toward machines that perform two or more functions.

TRACK-LINING machines (above) added considerably to the total of equipment buying last year.

TRACK BROOMS (below) are included in an entire new "family" of ballast working machines.

tons. Instead, it dropped to an estimated 850,000 net tons.

Why did rail and tie renewals decline in a year of generally good business conditions? This question was put to a number of maintenance officers on roads that failed to put in as many ties and lay as much rail last year as they had programmed. While other factors were involved in some cases, all those queried cited the strike of steel workers as the major retarding factor.

The strike had a two-fold effect. With respect to rail renewals, it had a direct effect in that it interfered with deliveries of new rail. With respect to tie renewals, as well as other types of maintenance work, the strike had an indirect effect in that the resulting sharp drop in carloadings brought about a temporary curtailment of maintenance activities on many roads.

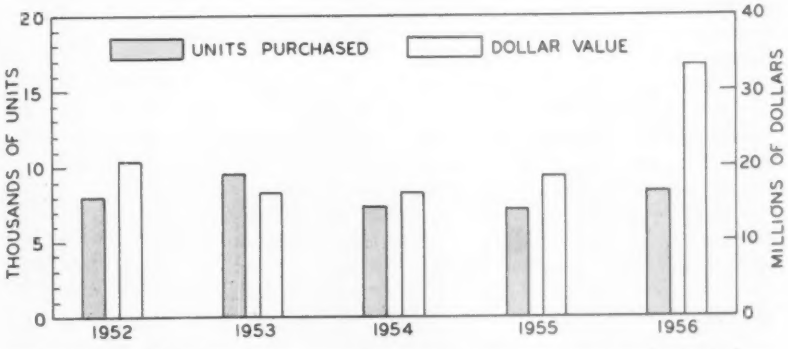
This view is borne out by the trend of maintenance-of-way and structures expenditures during 1956. For the first six months the monthly figures were consistently and substantially above those for 1955. In July, however, these expenditures dropped slightly below those for the previous year, and in August and September they were down substantially. Since this period coincides with that of the strike—and its aftermath—the event apparently effected the drop in expenditures.

Because these expenditures were up during the first part of the year, and showed recovery in the closing months, the total for the year was about the same as for 1955. From this situation it seems logical to conclude that the railroads spent more for various categories of work, such as track surfacing, ditching and bank restoration, repairs to bridges and buildings, roadbed stabilization, and weed and brush control.

What happened with respect to purchases of maintenance-of-way work equipment contrasts strongly with the apparent sluggishness in the other indices of activity. The railroads spent an estimated $33.1 million for such equipment last year compared with $18.7 million in 1955. This is by far the largest amount ever spent for this purpose, and is almost double the average annual expenditures for recent years.

The increase in expenditures for equipment cannot be accounted for entirely on the basis of an increase in the number of units purchased. The estimated total of units acquired —8,300—was moderately above the 7,100 units purchased in 1955, but this increase was not sufficient to account for the startling jump in the dollar outlay.

The mystery, however, is not difficult to explain. The explanation lies in the fact that many of the machines being bought today are of the larger and more expensive types. Many of



FIVE-YEAR RECORD of units purchased and their total cost emphasized sharp increase in dollar outlay for equipment in 1956.

Purchase of Work Equipment

	Number of Units	
	1955	1956
Ballasting Equipment	786	853
Bridge & Building Tools & Equipment	564	619
Cranes	40	82
Grading Equipment	228	325
Miscellaneous Track Equipment	680	894
Power Plants	365	498
Rail-Laying Equipment	684	898
Tie Renewal Equipment	149	360
Transportation of Men & Equipment	3,070	3,293
Weed-Control Equipment	149	157
Unclassified Items	276	215
Total Units Reported	6,991	8,194

the smaller units are holding their own, or even showing gains, but sharp increases have occurred in the purchase of machines, such as production tampers, ballasting equipment and tie-renewal machines, which have a higher unit cost.

The tabulation of equipment purchases in 1955 and 1956 by categories bears out the thesis that the railroads are investing an increasing amount of money in the more expensive machinery. The figures given in this table are those actually reported to this magazine by the railroads. The table shows that a modest increase occurred in purchases of bridge and building tools and equipment, a category that includes many smaller items, such as power saws, wood-boring machines, concrete breakers and the like. But it will be noted that relatively sharper increases occurred in some of the categories representing the larger units, such as cranes, transportation equipment, grading machines, ballasting equipment, and tie-renewal machines.

Bigger Plans for This Year

Judging by the railroads' plans for rail and tie renewals in 1957, it would appear that they are setting out to make up, at least in part, for the ground lost last year. If they are able to carry through with their intentions, as expressed at year end, they will lay a total of about 980,000 net tons of new rail this year, an increase of more than 15 per cent compared with 1956. They will also put in 26.1 million new crossties, an increase of nearly 12 per cent. If tie renewals reach this figure, they will be at a higher level than for any year since 1953.

It also appears that the dollar expenditures for work equipment will hold very close to the record figure established last year. A total of 92 roads have provided this magazine with estimates of the amount of equipment they plan to purchase in 1957. The planned purchases of these roads total up to $14.1 million. The same roads spent $15.3 million in 1956.

Mechanization Bringing Change

The performance of a greater proportion of necessary maintenance work with machinery isn't simply a matter of acquiring the machines and placing them in the hands of the present forces who will carry on pretty much as before, except that they will be using machines instead of hand tools.

To make the most effective use of the equipment the railroads are finding it necessary in many cases to make fundamental changes in (1) their basic maintenance-of-way organization, and (2) some of the time-honored concepts of how maintenance work should be done. As a consequence, work formerly done by the section forces, such as tie renewals, is now performed by highly mechanized outfits operating over a district or region, or even an entire system. Since the section gangs thus have less work to do, the sections are being lengthened on many roads, and even eliminated on some.

An example of what is happening in this respect is provided by the experience of a western line which, until recently, had made very little progress in mechanizing its track forces. During the past year this road purchased sufficient machinery to mechanize all major track maintenance work and simultaneously put into effect sweeping changes in its basic organization. This has happened, or is happening to some extent, on practically every railroad.

Why "Cycle" Maintenance?

The increasing use of "cycle" maintenance is an example of changes that are occurring in basic practices. Mechanization is most profitable when work can be done on a so-called mass-production basis. In a sense, "cycle" maintenance is simply a matter of allowing maintenance work to accumulate over a limited period of time, so that, when the work is done, the machinery will be operating more nearly at full capacity. Tie renewals are an example. It is generally considered that tie renewals must amount to a certain minimum per mile, say 200, before the use of a highly mechanized tie-renewal gang becomes economical.

Another development that is in evidence these days is a smoothing out of the ups and downs of maintenance programs. This is attributable partly to the fact that in recent years general business conditions have remained fairly stable. But what is more important is the growing realization among engineers, and railway managements too, that true economy in property maintenance can be achieved only by doing the work in an orderly manner, year after year, as required by the condition of the properties. Only in this way, furthermore, can the railroads achieve the degree of stabilization of their maintenance forces that is being sought for so ardently in some quarters.

They're Seeking Durability, Too

Mechanization is one way to reduce maintenance costs. Another way is to reduce the amount of work that has to be done. The railroads are working on this problem constantly. Every year more railroads are adopting the use of continuous welded rail, and a number of them are welding all new rail laid. The purpose, of course, is to eliminate joints and the expense of maintaining them.

Some railroads like the idea of continuous rail but they want to retain the flexibility that is inherent in the use of joint bars. Attempts are being made to solve this dilemma by means of so-called "frozen joint" rail, that is, rail that is laid "tight" so no movement of the rail ends takes place within the joint bars. Railroads that have installations of this type report good results from them.

Other measures being used to reduce the amount of maintenance work required on the track include the use of tie pads, larger tie plates, hold-down fastenings, better drainage, and roadbed stabilization through grouting and other practices.

The year 1957 can be expected to show a continuance of the efforts to mechanize a greater proportion of maintenance work, while at the same time reducing the amount of work to be done by means of devices and methods that will impart greater durability to the track, as well as railroad structures in general.

Railroads Search for Economies

. . . IN MOTIVE POWER OPERATION

Units now obsolete are being replaced with new or rebuilt units—"Economy" fuels are the big question mark in the campaign to reduce costs

Railway Outlook

If the year just past was notable for one thing in particular with respect to motive power, it was that the diesel-electric motive-power inventory of U.S. railroads has now reached a stage where substantial numbers of the units first built are definitely obsolete. They either being retired and replaced with rebuilt modernized units or units of entirely new design.

1,273 units were ordered during the 12 months ended December 31, 1956, and the deliveries during that same period reduced still further the number of steam locomotives still in service or carried on the books of American railroads.

Older units of diesel-electric locomotives are being returned to the builders' plants in increasing numbers for rebuilding or modernization, and many units in service have, for some time, been going through the "backshops" for heavy repairs and the modernization of their components.

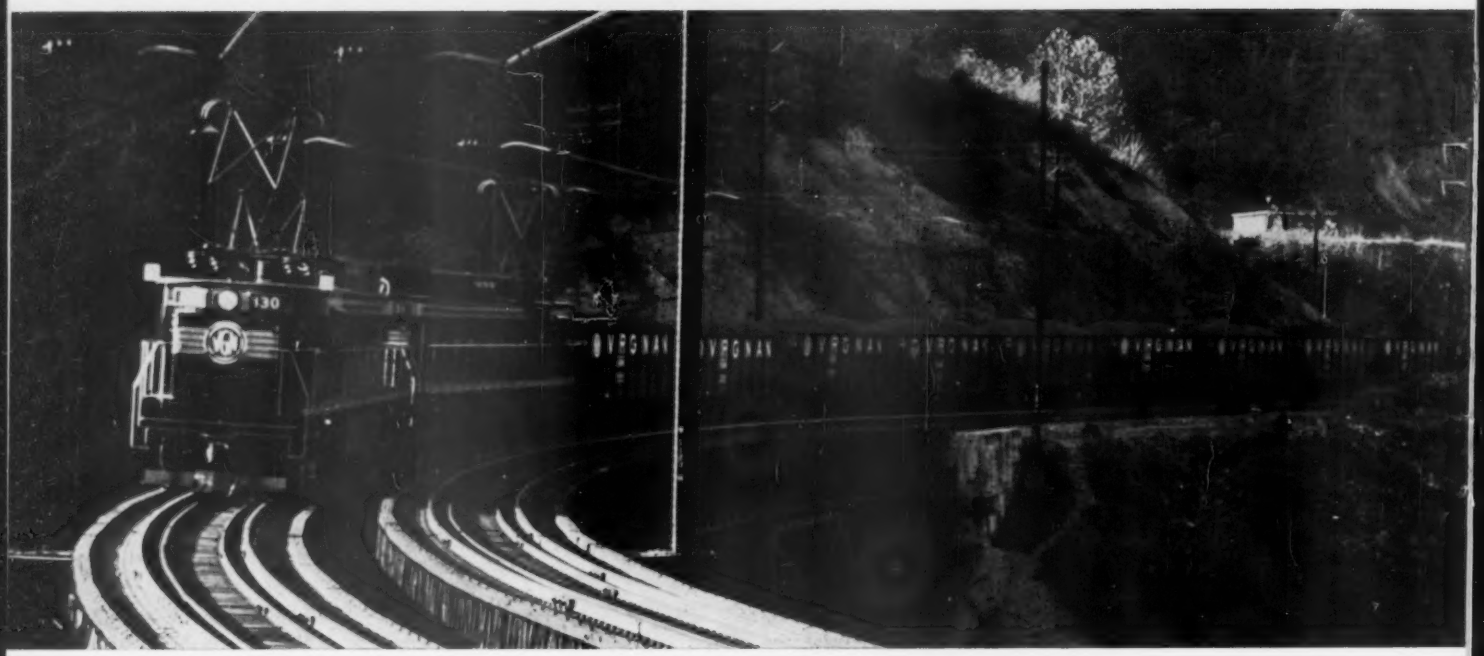
The Fuel Situation

Anyone concerned with railway motive power can hardly ignore one of the noteworthy developments of recent years which was intensified during the year just past by further installations and experimentation. That is the use of the so-called economy fuels. So far, the trend toward economy fuels has been mostly an effort to adapt lower cetane distillates and residual-distillate blends to use in locomotive diesel engines. This has been accomplished with varying and, in some instances, surprising results.

The case for economy fuels for railroad use was so well stated by Paul Garin, engineer of research and mechanical standards of the Southern Pacific, that it is worth repeating here now. Speaking before the Pacfic Railway Club in 1955 he said, in part: "The traditional fuel for the diesel locomotive has been the high grade straight run distillate with good cetane rating, low sulphur content, good volatility and relatively low end point. This type of fuel was readily available at low cost when diesel engines first entered the railroad field. However, the situation has changed considerably since the middle 1930's when diesels began to take their place as the principal type of motive power on the American railroads. The main change has been brought about by

By H. C. WILCOX
Mechanical Editor

UNION PACIFIC's gas turbine locomotives have won their place in the motive power picture.



GE RECTIFIER type electric locomotives are now in heavy grade service on the Virginian.

the increased demand for this type of product, called middle distillates, from the petroleum industry. [As the demand for diesel fuels increased the oil industry has been able to produce cracked distillates of suitable grades that performed well in railroad diesel engines as well as for domestic heating use, thereby relieving the pressure on the dwindling supply of straight run fuels.—EDITOR]

"The principal competitor for this portion of the refinery output has been the automotive industry with its demand for high octane gasoline, and the increasing use of jet engines by the Armed Forces. The introduction of catalytically cracked stocks in larger volumes after World War II has also altered the situation as to the type of products available from the large refineries. The competitive demands for middle distillate can be expected to become more acute in the years to come. In the event of a national emergency, we would be faced with the problem of obtaining adequate supplies of high grade straight run distillate in competition with the military and naval requirements. The railroads must therefore consider suitable alternate fuels that could be used in such an event.

"Everyone would prefer to use the highest grade fuel available in his diesel engines, and, all other things being equal, there would be no argument as to what type of fuel should be used. However, we must weigh the relative overall economics against the type of fuel we use. If we can find fuels that can be utilized satisfactorily and are less critical in nature, *and which do not extend our maintenance problems to a point that we can not live with them,* (the italics are ours) we may be able to accomplish an overall economic balance in favor of the use of such less critical fuels.

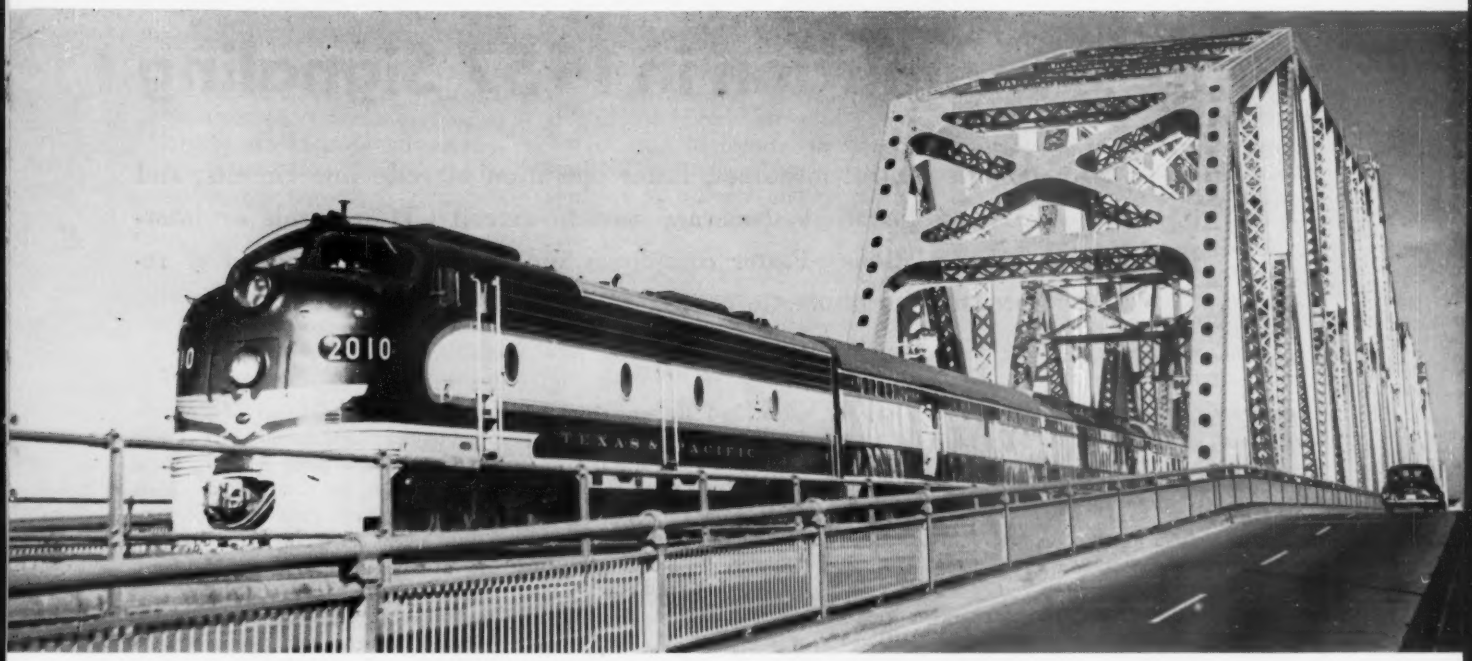
A Mutual Problem

"The engine builders, naturally, want to see the best fuel used in their locomotive engines, but it is necessary that they cooperate with the railroads and the oil companies in the development of less critical fuels which can be consumed in their engines of present design. They should also be looking forward to modifications in design for future motive power which can accommodate from the start less expensive fuels. The entire problem is one of mutual benefit to all concerned—the oil companies can dispose of products to railroads which would provide a better balance for their refinery outputs, the railroads will benefit by using lower cost fuels in their diesel locomotives, and the engine builders will extend the utilization of their equipment."

At the present stage of the efforts to find a lower price fuel, it would be extremely unwise to suggest that there are any definite conclusions to be arrived at. There are so many varying and unknown factors involved in this whole subject, particularly from a standpoint of economics, the chances are that conclusions arrived at today might prove to be unsound a year from now.

The search for economy fuel is not new. Once the diesel-powered locomotive had come into its own, the original economies due to the relatively low price and high efficiency of the diesel locomotive as compared with steam were realized. Then it was perfectly natural for railroad managements to be looking for an opportunity to cut further one of the largest items of operating expense. In the year 1955, for example, the railroads of the United States used, in diesel-electric locomotives, 3.4 billion gallons of fuel at an average cost of about 9½ cents a gallon.

It was not so many years back, certainly within the memory of most present operating and mechanical officers, that the industry heard plenty about economy fuels for steam locomotives. As a matter of fact, the situation got so bad on some roads under certain conditions that engine crews were practically accusing the management of "trying to burn bal-



T&P PASSENGER trains to and from New Orleans cross the Mississippi via the Huey P. Long Memorial Bridge.

last." Toward the end of the steam era, fuel was being bought not so much on a performance basis as on a price basis, and now we seem to be approaching a similar situation again.

One major difference between steam and diesel locomotive power is that one could put any kind of cheap fuel on the tender of a steam locomotive and about the worst that could happen would be that it would refuse to make steam. Fortunately it didn't go through the machinery. Some roads already, in their efforts to burn economy fuels in diesel engines, have found that their expense for "cleaning up the mess," as one mechanical officer stated it, may offset the money they hoped to save by using it.

One thing is certain; with the price of diesel fuel increasing all the time, more intensive efforts will be made by the railroads to find a way to reduce overall fuel expense. The chances are that the next year or two may witness some major changes in diesel-engine design and the development of fuel types not now being used. It may be only incidental that the supercharged two-cycle engine is a development which now appears to be nearing the practical and commercial stage.

The most notable event of the year in the field of electric traction is that the Virginian is now receiving 12 rectifier type electric locomotives from the General Electric Company. Each unit is rated at 3,300 hp, has a maximum operating speed of 65 mph and a maximum tractive force of 98,500 lb. They have shown excellent performance characteristics in service.

An innovation in electric traction is the third-rail operation of the "Dan'l Webster," a lightweight passenger train just readied for service on the New Haven. Normally supplied with power from Maybach engines through Mec-hydro torque-converter drives, these Baldwin-Lima-Hamilton units receive power in electrified territory to operate two 150-hp General Electric motors which in turn supply power to the mechanical transmission. There are two locomotives, one on each end of the nine-car train, and in third-rail territory each has 300 hp for traction.

An ACF-built train with a Fairbanks-Morse diesel-electric locomotive at each end is to be delivered to the New Haven. The locomotives employ d-c motors which receive power through third-rail shoes in electrified territory.

Two General Motors diesel-electric locomotives on order for the New Haven will be equipped for third-rail operation. To be called Type FL-9, the locomotives will be eight feet longer than the standard Type F. They will have four-wheel front trucks and six-wheel rear trucks with two traction motors on each truck.

The Great Northern terminated 47 years of electric operation in the Cascade Mountains in Washington on August 1, 1956. This was made possible by the installation of a ventilating system in the eight-mile Cascade tunnel. It permitted diesel operation of heavy eastbound freight trains through the tunnel against a 1.57 per cent grade. The need for changing locomotives at each end of the 74-mile section was eliminated.

Gas Turbines

With 25 4,500-hp oil-burning gas turbines in operation, the Union Pacific has ordered 15 8,500-hp units of this type. This order may be increased to total 45. The new locomotives will have 20 hp per ton of weight on drivers as compared with 16 on the 4,500-hp units and 14 on diesel-electric freight locomotives. The turbines on the 8,500-hp locomotives will have a lower fuel rate per horsepower and lower operating expense is anticipated.

A new test program on the coal burning gas turbine has been under way at the Dunkirk laboratory of the Locomotive Development Committee. It was earlier predicted that these tests would conclude the laboratory phase of this program and would be followed by an actual locomotive application.

More Automation in 1957 Signaling

More compact control machines, faster operation of code line circuits, and new selective automatic systems are used to extend CTC controls or interlocking consolidations—Faster computers and more exacting control of retarders are new in automatic control of yard switching

Railway Outlook

Using new techniques, extensive installations of signaling will be made in 1957. The principal purpose will be to improve train and yard operations, and to reduce operating expenses by (1) securing better utilization of locomotives; (2) removing main tracks not needed; and (3) eliminating numerous levermen, telephone operators, crossing watchmen and retarder operators.

Circumstances vary, but, on the average, wages for one leverman on duty three tricks every day, based on a 40-hour week, and including vacation time, will total approximately $20,000 annually. On the same time basis, the annual wage cost for a gateman, round-the-clock every day, at a single crossing, totals about $16,000.

In the projects scheduled for 1957, the signals, switch machines and retarders will look the same as before, but devices in wayside housings and in control offices can be decidedly different. Research in factories and on railroads is bringing much new electronic equipment into signaling, such as radio, microwave, radar, carrier and tuned coils. Objectives are to control more extensive territories from one machine; or to convert to automatic controls where possible.

Automatic Route Controls

Another objective is to modify signaling systems to suit requirements on light-traffic lines or in small yards; and thus to reduce first cost and maintenance expenses. Centralized traffic control can be made practicable on thousands of miles of single track not now so equipped; power switches and retarders will be justified in many smaller yards; and numerous interlockings, in extensive terminal areas, can be consolidated under one control.

In automatic electronic train identification, each train carries an inert tuned coil. As the train passes the wayside location, the train-carried coil passes through the field of a wayside fixed coil. Using this equipment, the Chicago Transit Authority installed an automatic selective control of facing-point junction switches in a power interlocking, thus dispensing with the services of a leverman.

Compact Control Machines

The trend in office equipment for centralized traffic control and consolidation of interlockings is toward smaller, more compact control facilities to enable one dispatcher to handle extensive territories.

In 1956, the Burlington solved this problem by consolidating all controls on a machine about the size of the console of a pipe organ. A single dispatcher now has direct control of 14 sizable interlockings in the 35.4 miles of the Chicago terminal territory—mostly 3 track—handling 122 scheduled trains daily plus numerous switching moves. The control buttons, operating on the entrance-exit principle, are arranged in vertical rows 1½ in. apart. Thus each interlocking is controlled from a panel only 4½ in. wide. A separate track diagram, mounted on pedestals, is arranged in a semicircle in front of and about 8 ft from the control console. Lamps on this diagram indicate track occupancy, switch position and signal clear or stop. Such an arrangement of control office equipment, coupled with high-speed coding systems, allows interlocking consolidation heretofore considered to be impractical.

The latest type of control office equipment, the traffic master, goes further in consolidation of controls than any previous design. In this new equipment, now being built for three 1957 projects, the console is equipped with pushbuttons rather than conventional levers. A group of buttons are used for location selection, and other buttons are for control of switches and signals. On the separate track diagram, switches and signals at each location are numbered in arithmetical sequence beginning with 1.

On the console there is a location pushbutton, for each location in the controlled territory, and a number of pushbutton panels, each 2 in. by 7 in., also numbered in sequence beginning with 1. Distinctively colored switch and signal pushbuttons, on each of these panels, control the like numbered functions at any station previously selected. To set up a route, the operator pushes the appropriate location button, then presses the corresponding switch and signal buttons to line up the desired route. By thus combining the controls of duplicate location layouts, the panel can be very compact. Therefore, the length of territory and number of controlled locations no longer dictate the size of the control machine.

Faster CTC Controls

One factor which contributes to the practicability of consolidating the control of interlockings, or extending the length of CTC territory controlled by one machine, is to develop a system that can handle numerous outgoing controls and incoming indications simultaneously on one two-wire line circuit.

The double-track CTC installed in 1956 on the New York Central between Buffalo and Cleveland includes the new Syncroscan electronic system. Information on the control machine, concerning position of switches, aspects displayed by signals and loca-

tions of trains, is given by a continuous scanning of field stations, with a maximum delay of 4 seconds after a change. Controls are sent in 1½ seconds. Different current frequencies are used so controls and indications are transmitted simultaneously.

On the 1956 Burlington project of consolidating the control of 14 interlockings, carrier frequencies are used to a greater extent than previously, in a system known as Quikode. Controls to any or all interlockings go out simultaneously in a maximum of 2.5 seconds, and indications come in simultaneously in 1.26 seconds. By this use of carrier systems, hundreds of miles of main line, including interlockings, can be controlled from a single office.

CTC for Light Traffic

Up to Jan. 1, 1957, centralized traffic controls had been installed on about 15,000 miles of single track, most of which can be classed as heavy traffic territories. Nearly all of this CTC is of the conventional type, including power switch machines and complete arrangements of dispatcher-controlled signals at both ends of the sidings. Railroads are expected to continue to install this complete CTC on heavy traffic single-track lines at the rate of 1,000 to 2,000 miles annually. In addition, there is a demand for a modified CTC on more than 30,000 miles of light-traffic single track. It should be installed at the rate of upwards of 2,000 miles annually during the next decade.

On such single-track lines, handling lighter traffic of 6 to 8 trains daily, the problem, as viewed by many railroads, is to modify the signaling to reduce the cost, so that CTC can be justified. Interest in this subject was renewed in 1956 by (1) publicity by manufacturers; and (2) a panel discussion at the annual meeting of the AAR Signal Section.

Fewer Tracks with CTC

The most recent installation of this modified CTC on the Burlington is reported in the Dec. 10, 1956, Railway Age. A CNR project was described in the April 20, 1953, issue. Three forms of CTC as used on the Seaboard were discussed in the October 22 issue. Thus a start has been made to pioneer modified CTC.

With modern locomotives, trains are fewer and are operated at higher speeds. In some multiple track sections, these trains can now be operated effectively on fewer tracks. According to AAR reports, the annual track maintenance expense, in 1954, averaged $2,802 per mile of main track; the maximum being $9,850 and the minimum $1,488. A good time to change to fewer tracks is when extended mileages of old rail is due for renewal. Capacity to operate present-day traffic without delays is secured by installing centralized traffic control on the remaining track or tracks.

Projects completed in 1956, or now under way, to remove one track of previous double track, include 40 miles on the Wabash; 80 miles on the Grand Trunk Western; 60 miles on the Bessemer & Lake Erie; 60 miles on the Louisville & Nashville; and 150 miles on the Southern. On various parts of the New York Central, projects are authorized or proposed to change double track to single track on several hundred miles.

In 1956 the NYC completed a project including the removal of two tracks on 167 miles of four-track between Buffalo and Cleveland. Capacity to operate about 85 trains daily on two tracks has been secured by installing CTC with signals for train operation both ways on each track. Power-operated crossovers, spaced an average of 7.3 miles, are used to divert trains from one track to the other, so that faster trains can run around slower ones.

Automation in Yards

By employing radar, automatic computers and other electronic devices, the power switches and retarders in modern gravity classification yards are controlled automatically. Advantages are (1) less damage to lading and cars; (2) reduction in operating costs because no retarder operators, except one man as monitor, are required. In addition to four yards equipped previously, this automatic system was placed in service during 1956 in a yard on the Great Northern and in one yard on the D&RGW, and is being installed in new yards being constructed on the Frisco, the New York Central and the Missouri Pacific.

Using different equipment, the Union Pacific in 1956 applied automatic controls in a previously existing yard at North Platte, Neb. New features of this project are that the automatic switching is controlled by a unique machine in which ½-in. metal balls, rolling down through an arrangement of selectors, accomplish automatic control of the switches, whereas previous installations use re-days. Another feature is that the extent to which each classification track is occupied by cars is shown by a "track fullness" indicator, and this factor is included in the operations of the computer which determines the speed at which a car is released from the last retarder in its route.

Computer Answers Instantly

New concepts in automatic controls of retarders are being included in equipment for yards now being built on the Burlington and the Pennsylvania. Rather than requiring several seconds to operate, the new type electronic computers, in this new system, operate instantly to determine the speed at which the final retarder is to release a car. This system, known as Velac, will probably be included in four other yards being planned for

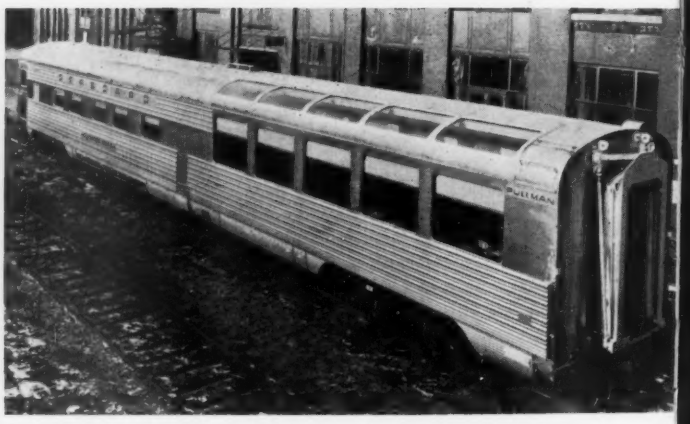
Also these new yards on the Burlington and the Pennsylvania are to include "programmed switching" in which the switch list is punched in paper tape that is fed through a device to initiate the automatic switching control of the power switches that route cars from the hump to their respective classification tracks.

Crossing Protection

New developments in the control of automatic highway crossing protection, brought forth in 1956, dealt primarily with methods for preventing unnecessary delay to highway traffic when train movements over a crossing are not imminent. Because of increased wage costs, railroads in 1956 planned and installed numerous crossing protection projects including automatically controlled gates to replace watchmen or gatemen.

Signaling on railroads is never finished, but must be changed constantly, not only to secure the advantages of up-to-date equipment but also to install modern systems of signalling which will meet tomorrow's need for increased safety, reduced operating expenses and more efficient utilization of locomotive cars and tracks. For these reasons the volume of signaling installed by the railways will continue at a high level during 1957.

KCS's 50-passenger chair cars were built by ACF.



SKY-VIEW on Pullman-Standard's SAL lounge-sleepers.

PASSENGER SERVICE IN 1957 . . .

Milestone or Millstone?

Some railroads have taken steps toward the elimination of much first-class train travel; others feel that it has a future and are doing something about it.

Some roads are trying new designs of lightweight coach trains and like what they have; others feel that they conducted these experiments during the 1930's; and some have recently acquired elaborate, conventional cars.

U.S. passenger service is currently being conducted with a car fleet with an average age of nearly 30 years; there is little promise that the volume of car deliveries during 1957 will do much to keep this fleet from growing a year older. Branch line and secondary main line services are approaching extinction; but some new equipment has been purchased for these operations and for suburban service.

CONCLUSION: There is no apparent general solution for this most vexing railroad problem. A lack of agreement between the various railroads, and frequently poor presentation of the facts about passenger operations have done much to produce apathy and outright antagonism among the customers.

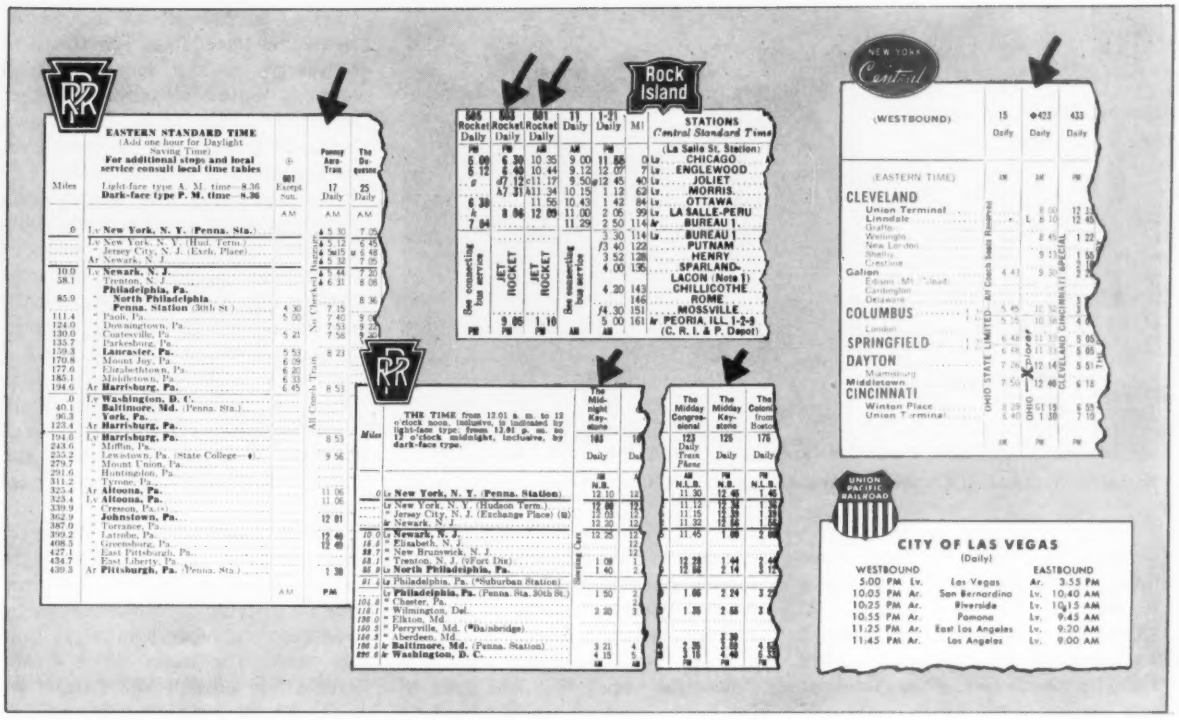
Railway Outlook

This new year finds three "veteran" lightweight train operators—at least, veterans of the present lightweight era. The New York Central, Pennsylvania and Rock Island each will soon have available results of a year's lightweight train operation in revenue service on which to base decisions.

It was on roads such as the Burlington, Illinois Central and Union Pacific that the original articulated, low-slung, lightweight, coach streamliners of twenty years ago were tried out. During that period, the Pennsylvania and New York Central displayed little apparent interest in such developments.

By F. N. HOUSER, JR.
Associate Editor

But this is not the case in 1957. At the end of February the Pennsylvania will have finished its first year of GM "Aerotrain" operation, and the Rock Island will soon be able to survey a year of ACF "Talgo" service. In early June the New York Central will be able to look back over twelve months of Pullman-Standard "Train-X" operation and six months of running the Aerotrain. The Aerotrain which formerly ran on the NYC became the Union Pacific "City of



COST-CUTTING lightweight trains are in service across the country.

Las Vegas" beginning December 18 last.

Since last June the Pennsylvania has operated its tubular "Keystone" which is a mixture of regular and radical concepts. Since August the "Keystone" has been regularly hauling the Budd lightweight "Pioneer" coach but this car has not been in revenue service during this time. The New Haven has just started to accumulate operating experience with a Train-X, and awaits a Talgo and a special six-car adaptation of the Budd RDC. The Boston & Maine will soon begin to operate a Talgo.

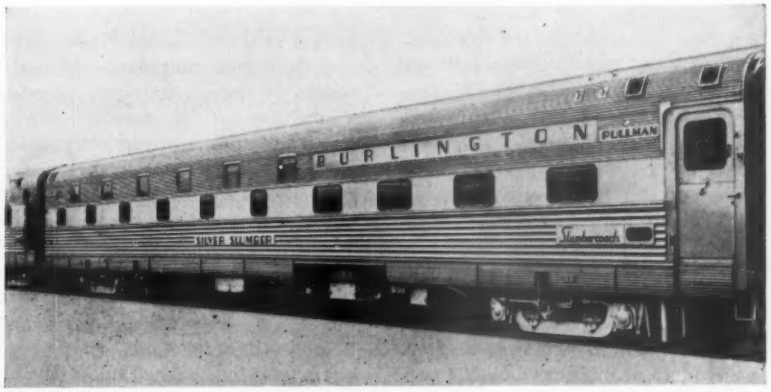
But what has been this first year's experience on the NYC, Pennsy and Rock Island? Railway Age asked these lines and can summarize their findings:

Passenger Reaction: Surveys and interviews on the Aerotrain have indicated to the PRR that there is a generally good passenger reaction and the road is convinced that the train has attracted some new business. Without benefit of a formal study that road says that the reaction to the "Keystone's" tubular coaches has been "enthusiastic."

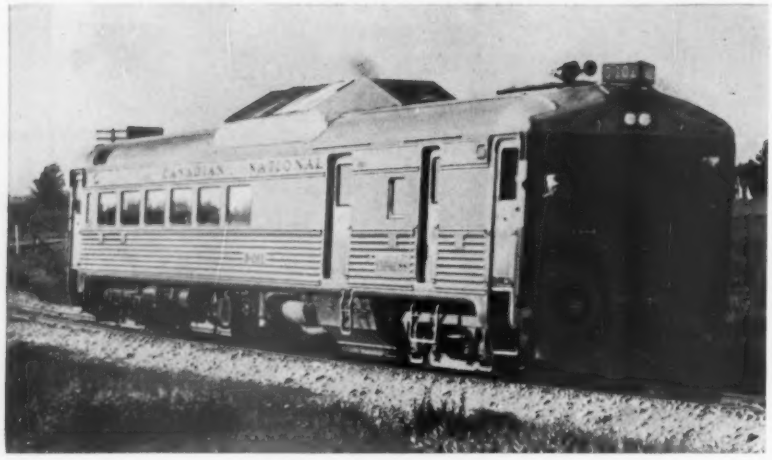
New York Central studies and public opinion surveys on its various lightweight services have shown a favorable response—sometimes running as high as 94 per cent—to the question "Did you enjoy the trip sufficiently to take the train again?" NYC customers gave special approval to the trains' speed, riding comfort, decorations, cleanliness, large windows, seat comfort and schedules.

Early adverse comments on NYC trains dealt with riding qualities and the Rock Island received similar complaints when the "Jet Rocket" first went into service. Engineering refinements and service adjustments have done much to improve these conditions on both roads, and the Rock Island can now report that the ride is "most satisfactory."

Food Service: Diners may be expensive and troublesome but they do not disappear easily. Rock Island made no effort to depart from tradition and ordered the "Jet Rocket" with a complete dining car and kitchen. Pennsy offers sandwich service throughout the Aerotrain and provides hot meals in the forward cars, serving them at the coach seats. The NYC's mobile sandwich service through the Aerotrain and Train-X coaches had to be supplemented with



Slumbercoach on Burlington, a "first," is Budd approach to sleeper problem.



Canadian National RDC's are now in branch and main line service.

warm meals. Finally the NYC Aerotrain had one coach converted into a refreshment car and the NYC "Xplorer" had such a car when it went into revenue service. The Union Pacific now has two of the Aerotrain cars devoted to refreshment and meal service.

Operating Experience: The various lightweight train designs are all apparently satisfactory with the operating departments of the lines that run them. Rock Island says its Talgo has had an on-time record of almost 100 per cent. Pennsy reports that its new trains have on-time records comparable with its standard passenger trains.

Maintenance has presented no unusual problems other than those of handling unfamiliar equipment; some training has been necessary to assure prompt and efficient servicing and repair. NYC says that performance has been satisfactory and cites an availability factor of 91.8 per cent for the first 147 days of "Xplorer" operation on its 520-mile daily round trip.

Revenues and Expenses: New York Central reports that revenues from both the Aerotrain and the "Xplorer" have covered the "over the rail" expenses of the trains. Modifications and improvements of the equipment while in service have had a marked influence on operating costs. Both trains drew a great deal of public interest and comment which was often reflected in increased revenues on the sectors where the lightweights were operating. For example, passenger revenues between Cleveland, Columbus and Cincinnati were in a downward trend at the time the "Xplorer" was introduced on that run. The "Xplorer" reversed this downward trend and added new overall revenue for the area.

Rock Island reports that its Chicago-Peoria passenger volume is "about the same" as it was prior to the introduction of the "Jet Rocket," but that its operating costs are less than for conventional equipment.

The Pennsylvania says the Aerotrain is moving some new traffic, and gives as an example an increase of westbound travel from Harrisburg to Pittsburgh on this schedule which formerly must have moved by other means. The "Keystones" have shown increased volume and revenues over the conventional trains for which they were substituted. The Pennsylvania feels that some of this undoubtedly has been drawn from other trains of conventional equipment in the same service. Because the "Keystone's" tubular cars are operated in conjunction with conventional equipment it is impossible to derive a realistic operating cost figure. The Pennsy Aerotrain has been operating at an average of about $1.90 per train-mile including the maintenance and food service costs.

Future Plans: None of the roads has immediate plans for additional purchases of any of this equipment. All are studying their own experiences and those of other lightweight train operators. The trains which finally evolve very possibly will differ from any one now operating, but will incorporate features that have met with public acceptance, and that will lower purchase, maintenance, and operating costs.

"... And in the Other Corner"

Conventional equipment deliveries and development work have not stopped. Numerous roads do not seem dissatisfied with the profit potential in the full size, modern passenger car as it now is. The Santa Fe has just completed six months of service with 47 of the most expensive, most elaborate coaches ever built; and this new high-level "El Capitan" service has been popular.

The Burlington has reequipped the "Denver Zephyr" with new cars which for the most part are patterned after designs used for "Zephyrs" since 1949. The Burlington did pioneer "Slumbercoach" service on these new "Denver Zephyrs" — an arrangement which provides complete private sleeping accomodations at coach fares. However, the Burlington also bought new roomette and bedroom sleeping cars which went into service on these same trains. Northern Pacific acquired new lounge cars, and the Seaboard took delivery of new lounge-sleepers and coaches. Eastern roads continue to operate overnight coach trains without leg-rest reclining seats—an accepted convenience on Western lines, which they consider an excellent sales point.

Commuter, baggage, express and mail operations have all come under fire for the financial and operating burdens which they impose. Yet, paradoxically, the bulk of new passenger equipment deliveries for the early months of 1957 will be commuter coaches and baggage cars.

Another car which continues to be popular is Budd's RDC. The Boston & Maine will soon complete a fleet of 107 units, which now is doing a major part of the B&M's suburban and main line duty. Both big Canadian roads have announced plans which will eventually make their RDC fleets outnumber even the B&M's substantial totals. More and more U.S. lines are becoming RDC operators, but much of last year's RDC business was in repeat orders.

Equipment is either available or is being developed to fit the requirements of today's competitive situations. Salesmanship, rates and attitudes may well be the major factors in the passenger service future.

RAILWAY AGE
The Industry's Newsweekly

A Review of Railway Operations in 1956

By J. ELMER MONROE
Vice-President, Association of American Railroads,
and Director, Bureau of Railway Economics

HIGH LIGHTS OF THE YEAR

RAILROADS experienced a good traffic year in 1956. Freight volume was generally at a high level, influenced by industrial trends and particularly by the resurgence of coal production. Passenger traffic leveled off after several years of declines.

The freight car supply turned slightly upwards, and although additions to the car fleet were comparatively small, service requirements were met more satisfactorily than in the preceding year.

Earnings were down, but rate relief presently being sought may improve that situation in the near future.

The traffic outlook for 1957 is encouraging.

Economic activity in the United States in 1956 was at its highest level in history, exceeding previous records established in 1955. Industrial production was up about 3 per cent; gross national product rose about 5 per cent; expenditures for new plant and equipment zoomed 20 per cent or more above the previous record set in 1955. Leaving aside the temporary effects of the steel strike in July, and notwithstanding a few soft spots in the economy, business showed marked stability except for a mild dip just before midyear and an upward tendency in the late months.

On the international front, tensions were heightened by the Suez Canal issue and by the Hungarian revolt in Europe. Where these developments will ultimately lead is a question which no one can answer with assurance at this time. However, until finally resolved they are bound to exert a continuing influence on the American economy.

At home, the nation's voters, by a large majority, returned President Eisenhower to office for another four years, although electing a Congress controlled by the opposite political party. Confidence was thus expressed in the integrity and ability of the nation's leader to cope with the many difficult problems present in

both domestic and international fields. The prospect is for continuation of current national economic policies, thereby exerting a strengthening influence on future business activity.

In early 1956, the Interstate Commerce Commission authorized the first general freight rate increase in nearly four years. Although the increase was less than the amount requested, encouragement was found in fact that it was placed in effect just 68 days after filing of the carriers' petition. The reduction of time lag between increased costs and increased rates, even to a period that would still be regarded as intolerable in other businesses, was hailed as an achievement in the railroad industry. Further progress in reduction of time lag was noted later in the year when the commission, acting on a petition filed by Eastern and Western carriers on November 6, granted authorization for emergency freight rate increases to become effective December 28, 1956.

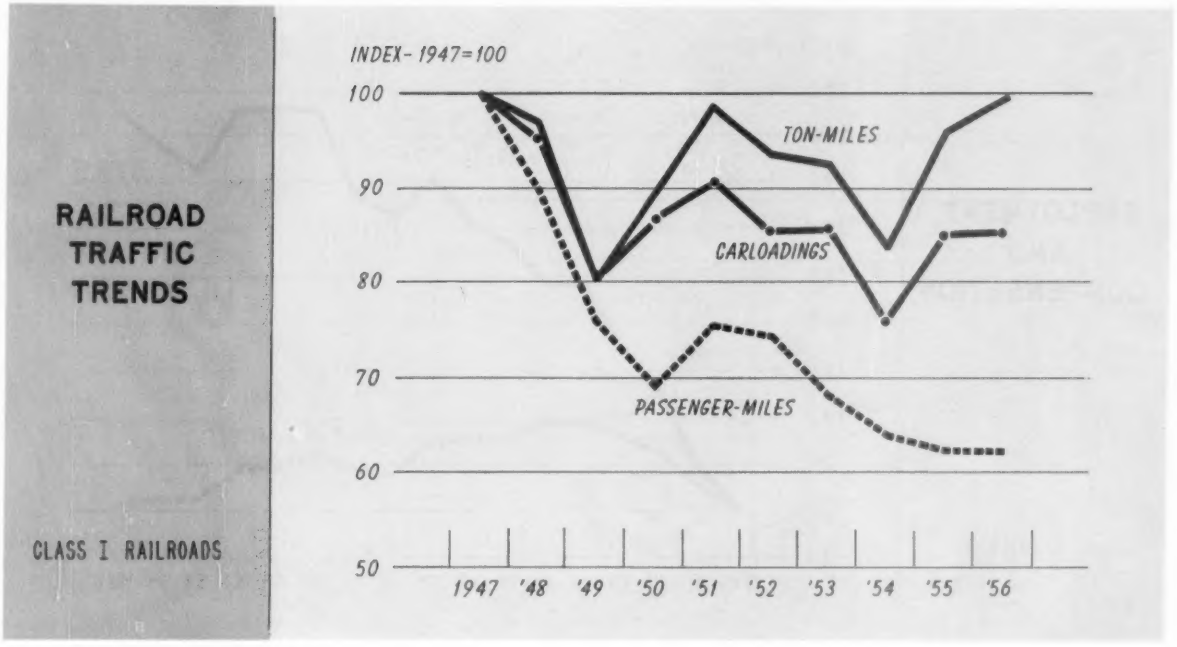
Hearings before congressional committees on legislation proposed in April 1955 by the Presidential Advisory Committee on Transport Policy and Organization provided further opportunity to focus public attention on inequitable and uneconomic competitive conditions in transportation and thereby to lay a foundation for future constructive legislative action.

Legislation enacted by the Congress in 1956 for a vastly expanded National Highway Program, although it will give further competitive advantages to commercial operators in highway transport, contains provisions that have an encouraging aspect to the railroads. For the first time Congress, accepting the principle that highways should be paid for by those who use them rather than by general taxpayers, levied definite user taxes whose proceeds are to be placed in a "highway trust fund" and this fund provides the only source for federal aid to highways.

The Congress also accepted the principle that the large and heavy commercial vehicles, considering their extraordinary and costly highway requirements, should be required to pay special user taxes in addition to those levied upon motor vehicles generally, and a beginning was made in the application of this sound principle notwithstanding vigorous opposition by the heavy trucking industry.

A further constructive feature of this highway legislation is the adoption of federal ceilings upon vehicle weight and size, to provide for reasonable conditions of use of the costly improvements. Although the tax and use provisions adopted with respect to the heavy commercial vehicles are far from adequate, they do signify awareness by the Congress and by the public of the problems involved.

Despite these glimpses of silver lining, the railroad picture in 1956 remained overcast in many respects. Rate and fare increases early in the year proved inadequate to offset increased costs incurred late in 1955; and, even with increased traffic, the rate of return again fell to less than four per cent on net investment. Additional wage and price increases incurred late in 1956 added heavily to operating costs, and necessitated further requests for rate and fare increases. The added costs cut deeply into net income at a time when increased net was needed to finance essential capital improvement programs.



Performance

TRAFFIC TRENDS

FAVORABLE economic trends which in 1955 lifted railroad freight traffic volume above the level of other recent years carried over into 1956. As a result, freight traffic continued its upward course, and passenger traffic leveled off at the approximate level of the preceding year.

Revenue ton-miles, which take into account both tonnage handled and distance hauled, aggregated approximately 650 billion in 1956, some 4 per cent above the 1955 volume, and surpassed only in the eleven postwar years by the 655 billion handled in 1947. Compared with 1955, the bulk of the increase took place in the first six months of the year. The last half was adversely affected by a five-week steel strike which commenced on July 1 and ran through the first week in August. In addition to this, the second half of the year had to compete with heavy traffic months recorded in the latter part of 1955.

Table 1–Comparative Traffic Summary

1947-1956 Year	Revenue ton-miles (millions)	Revenue Passenger-miles (millions)	Revenue carloadings (thousands)
1947	654,728	45,921	44,502
1948	637,917	41,179	42,719
1949	526,500	35,095	35,911
1950	588,578	31,760	38,903
1951	646,620	34,614	40,499
1952	614,754	34,010	37,985
1953	605,813	31,655	38,216
1954	549,259	29,286	33,915
1955	623,615	28,526	37,636
1956 (est.)	650,000	28,500	37,842

Table 2–Carloadings by Commodity Groups

1956 vs. 1955

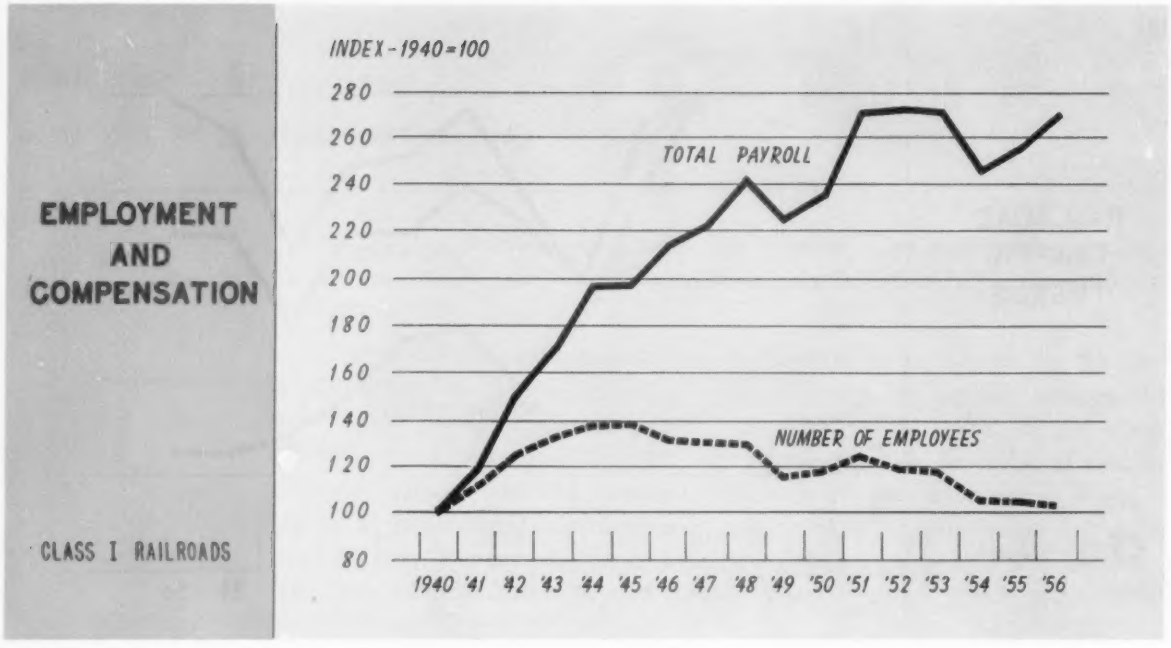
Commodity group	Per cent of group to total	1956 carloads (thousands)	Increase over 1955 carloads (thousands)	Increase over 1955 Per cent
Miscellaneous	50.1	18,953	d134	d0.7
Coal	18.5	7,005	497	7.6
Merchandise, LCL	8.1	3,056	d174	d5.4
Ore	7.3	2,748	d 98	d3.5
Grain	7.1	2,705	72	2.7
Forest Products	6.1	2,317	41	1.8
Coke	1.6	616	1	0.1
Livestock	1.2	442	1	0.3
Total	100.0	37,842	206	0.5

d Decrease

Revenue passenger-miles, after four consecutive years of decline, showed a tendency to level off in 1956, the aggregate for the year being 28.5 billion, or virtually the same as the total recorded a year earlier. It seems apparent, however, that failure of rail passenger traffic to increase may mean a further decline in the railroads' percentage of total intercity travel.

Carloadings of revenue freight for the year 1956 approximated 37.8 million cars. This total was about 206 thousand cars, or 0.5 per cent, above the 1955 aggregate. While greater than in 1949, 1954, and 1955, it was less than in any of the other postwar years. The tendency of carloadings in recent years to lag below ton-miles as an index of freight volume is largely the result of increases in average loads and average hauls per car.

Save for an increase in coal traffic, total loadings in 1956 would have been below the 1955 level. Coal loadings were up by 497,000 cars, or 7.6 per cent, thus more than compensating for a decline of 291,000 cars in other traffic as a whole. Other relatively large commodity groups



showing increases were grain, up 2.7 per cent, and forest products, up 1.8 per cent. The smallest groups, coke and livestock, remained relatively unchanged.

The miscellaneous group, which accounts for about 50 per cent of all carloadings, decreased by 134,000 cars, or a little less than one per cent. Losses registered by this important segment of rail traffic in the last half of the year were due to various factors, chiefly the five-week steel strike in July and early August. LCL loadings resumed the trend of recent years and were down 5.4 per cent. Ore loadings declined 3.5 per cent due in large measure to suspension of shipments during the period of the steel strike.

RATES AND FARES

THE YEAR 1956 was one of considerable activity in the field of railroad rates and fares as the railroads found it necessary to seek additional revenues for the following purposes: (1) To offset substantial wage and other cost increases experienced largely in the fourth quarter of 1955; (2) to improve their inadequate rates of return (Eastern and Western roads); and (3) to offset further wage and other cost increases coming upon the industry in the waning months of 1956. All services—freight, passenger, express, and mail—were affected.

Ex Parte 196. In the first of these three movements, the railroads on December 30, 1955, sought an across-the-board increase of 7 per cent in freight rates and charges, filing tariffs simultaneously with the formal request that the Interstate Commerce Commission permit the rates to go into effect on the specified date without suspension. The commission set the matter down for expedited hearings, docketed as Ex Parte No. 196.

After full hearings, oral argument and submission of briefs, the commission on March 2, 1956, authorized a general increase of 6 per cent in freight rates and charges, with a number of exceptions and "hold-downs." The new rates, calculated to average an increase of about 5.5 per cent over then-existing rates, were made effective on March 7, 1956.

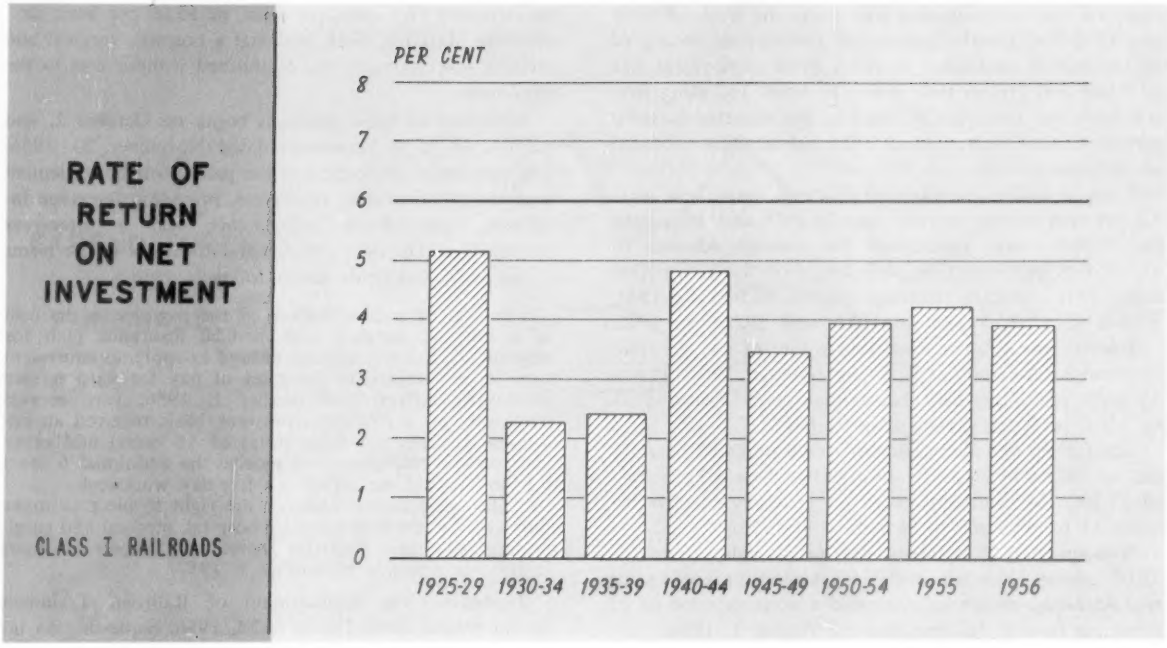
Ex Parte No. 206. On September 27, 1956, Eastern and Western roads petitioned the commission to investigate the adequacy of freight rates and charges on all U.S. railroads and requested an increase of 15 per cent to meet revenue needs of the Eastern and Western carriers. By order of October 1, 1956, the commission instituted such an investigation, made all railroads respondents, and fixed a schedule for filing of evidence and holding of hearings extending into 1957.

Because of new wage contracts effective November 1, 1956, calling for a substantial increase in hourly rates of pay and in certain fringe benefits, together with an increase in the unemployment payroll tax rate effective on January 1, 1957, and increases in material prices, Eastern and Western railroads on November 6, and Southern railroads on November 14, filed petitions for a general emergency increase of 7 per cent in freight rates and charges.

The request of Eastern and Western railroads for a 7 per cent emergency increase was heard at Kansas City, beginning November 26, followed by oral argument beginning December 3. On December 17, the commission authorized increases of 7 per cent in the East, 5 per cent in the West and 5 per cent in interterritorial rates (including traffic to and from the South), subject to a number of exceptions and "hold-downs." The new rates, which the commission estimated would yield $402.6 million in additional revenue to the Eastern and Western lines, were put into effect December 28, 1956. The petition of the Southern carriers for similar emergency relief (intraterritorial rates) was set for hearing January 7, 1957.

Passenger fare increases. Effective May 1, 1956, basic passenger fares on Eastern and Western roads were increased by 5 per cent (Ex Parte No. 202). Southern lines increased basic passenger fares by 5 per cent effective May 15, 1956 (Docket No. 31992).

On August 10, 1956, a group of 8 Eastern railroads



filed for a 5 per cent increase in basic coach fares and (as to 6 of the 8 roads), a 45 per cent increase in first class fares. This passenger fare increase case was heard under Docket No. 32032 on October 3, 1956. A report released by the commission on December 31, 1956, authorized the 8 roads to increase basic fares and charges, coach and first class (other than commutation), by 5 per cent for interim application, the new rates to become effective upon no less than 5 days' notice.

On November 21, 1956, a petition was filed by the Western railroads for an increase of 5 per cent in passenger fares, both first class and coach. By order dated December 31, 1956 (Ex Parte No. 207) the commission allowed those increases to become effective January 1, 1957.

Express rates. Effective March 20, 1956, the Railway Express Agency increased its rates on first and second class traffic by 7 per cent; and a further emergency increase of 4 per cent was put into effect December 27, 1956.

On August 21, 1956, the agency asked the commission to institute an investigation into the adequacy of express rates and charges and to authorize a 15 per cent surcharge on LCL shipments within Eastern territory. An inquiry was ordered (Docket No. 32035), hearings were held, and the matter was pending at the close of the year.

Mail pay. On July 3, 1956, Eastern roads filed for a re-examination of mail pay rates, and this was followed soon after by a similar petition on behalf of Southern lines. Both petitions were pending before the commission at year's end.

Charges for Pullman space. The Pullman Company increased its charges on interstate traffic by 7.5 per cent effective May 1, 1956.

Early in December 1956, Pullman, seeking emergency relief, filed for an additional 7 per cent increase in charges for Pullman space. This increase went into effect January 1, 1957.

Owing to rate and fare increases, average unit revenues of the railroads in 1956 showed reversal of the downward trends of recent years. Average revenue per ton-miles in 1956 was 1.381 cents (first nine months), up slightly from the average of 1.370 cents for the year 1955, but about one-fourth of a cent below the 1953 record average of 1.478 cents. Revenue per passenger-mile averaged 2.664 cents in the first nine months of 1956, compard with 2.603 cents for the year 1955.

The 1956 revenue per passenger-mile equaled the previous postwar high of 2.664 cents per passenger-mile set in 1952, but remained below the average of a period of years prior to 1931.

Table 3–Revenue Per Unit of Traffic

1947-1956 Year	Per ton-mile (cents)	Per passenger-mile (cents)
1947	1.076	2.097
1948	1.251	2.341
1949	1.339	2.452
1950	1.329	2.561
1951	1.336	2.601
1952	1.430	2.664
1953	1.478	2.660
1954	1.420	2.620
1955	1.370	2.603
1956 (9 mos.)	1.381	2.664

EMPLOYMENT AND WAGES

RAILROADS experienced another round of increased wage costs in 1956. All standard labor organizations filed new demands during the year, and at the close of the year contracts providing for three-year term agreements had been signed covering approximately 81 per cent of all employees.

Employment in 1956 declined for the fifth consecutive

year, but total compensation rose above the levels of 1954 and 1955 and closely approached the all-time record of $5,338 million established in 1952, when employment was 17.5 per cent greater than it was in 1956. Including payroll taxes and other fringe benefits, not reported in compensation, total wage costs in 1956 substantially exceeded all previous records.

Average annual earnings of railroad employees were 7.2 per cent greater in 1956 than in 1955 and, in passing the $5,000 mark, maintained the average advance of $1,000 that has occurred in each successive five-year period since 1941. Annual earnings passed $2,000 in 1941, $3,000 in 1946, $4,000 in 1951, and $5,000 in 1956.

The average straight time hourly rate of pay for railroad employees stood at $2.13 for the year 1956. It was 17 cents, or 8.7 per cent, higher than in 1955 and $1.20, or 129.0 per cent, greater than in 1945.

The full impact of the increases consummated near the end of 1956 will place the average hourly wage in excess of $2.20. The minimum wage rate generally effective became $1.70 per hour on November 1, 1956.

Non-operating Employees. By notice dated June 20, 1956, eleven railroad labor organizations representing non-operating employees requested a wage increase of 25 cents per hour to become effective August 1, 1956.

Mediation of these demands began on October 3, and continued until November 1, at which time an agreement was signed. The stated purpose of the agreement was to fix the general level of compensation for a period of three years with provision for:

1. A wage increase of 10 cents per hour effective November 1, 1956.
2. A second wage increase of 7 cents per hour effective November 1, 1957.
3. A third wage increase of 7 cents per hour effective November 1, 1958.
4. A cost-of-living wage adjustment to be made commencing May 1, 1957, and each six months thereafter (one cent for every one-half point change in the Consumer Price Index above 117.1).
5. Increase in the carrier-paid hospital, medical and surgical insurance plan from $6.80 to $11.05 per employee per month in order to extend benefits to dependents of covered employees beginning December 1, 1956.
6. A three-year moratorium from November 1, 1956, on demands for wage increases or compensatory rules changes.

Firemen. The Brotherhood of Locomotive Firemen and Enginemen filed a notice on January 30, 1956, requesting that basic rates of firemen, hostlers and hostler helpers be increased 37.5 cents per hour, or $3.00 per basic day, effective March 1, 1956, and that a hospital, surgical and medical insurance plan be established without cost to the employees.

Mediation of these demands began on October 2, and culminated in an agreement dated November 20, 1956. The agreement conformed to the pattern of the settlement with the non-operating employees, providing for wage increases, cost-of-living adjustments, and a three-year moratorium. The only significant differences in the terms of the two agreements are as follows:

1. In lieu of a contribution by the carriers to the cost of a hospital, surgical and medical insurance plan for dependents, the organization elected to apply an equivalent sum to an increase in the rates of pay for yard service employees. Effective November 1, 1956, yard service employees on a five-day workweek basis received an additional 6 cents per hour (total of 16 cents) and other yard service employees will receive the additional 6 cents per hour establishment of the five-day workweek.
2. The organization reserved the right to elect to make provision for the payment of a hospital, medical and surgical insurance plan from the increase of 7 cents per hour to become effective November 1, 1957.

Trainmen. The Brotherhood of Railroad Trainmen served notices dated February 15, 1956, requesting an increase of $3.00 per basic day for road and yard service employees and an additional increase of $2.50 per day for employees engaged in short turnaround passenger service. Straight time pay for 7 holidays when they fall on a work day and payment of time-and-one-half in addition to straight time pay for work performed on holidays was also requested. For dining car stewards, a basic month of 175 hours or less with the payment of punitive overtime after 190 hours per month was also requested.

Mediation proceedings relating to these demands started on October 3, and terminated on December 10, 1956, when arbitration was proffered.

On December 13, arbitration of the dispute was declined by the brotherhood, but a stipulation was signed by the parties requesting the establishment of an emergency board to investigate and report its findings to the President. The stipulation also provided that the emergency board would convene in Chicago on January 22, 1957.

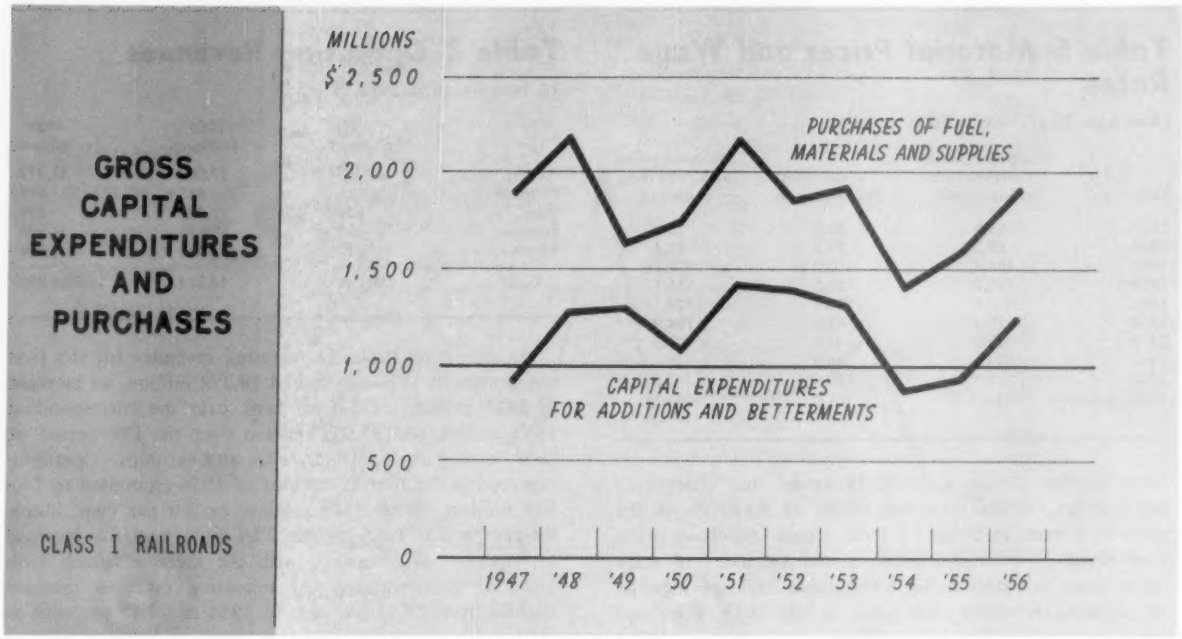
Switchmen. On March 31, 1956, the Switchmen's Union of North America served notices asking for an increase of 17 per cent in rates of pay to become effective May 1, 1956. They also requested an additional 8 per cent increase to compensate for alleged inequities between the earnings of switchmen and road men. Straight time pay for 7 holidays and payment of 2 1/2 times the basic daily rate for service performed on holidays were also demanded. Mediation proceedings commenced on October 3, and on December 12 an agreement was reached with the SUNA, subject to ratification by the membership, which follows the general three-year agreement with non-operating organizations.

Conductors. By notice dated July 2, 1956, the Order of Railway Conductors and Brakemen requested that all basic daily rates be increased by 25 per cent to become effective August 1, 1956. An additional 20 per cent increase was asked on all minimum pay passenger assignments confined to 150 miles per day and on all local freight road switcher, mine run and like assignments whose work opportunity is confined to 100 miles or less, 8 hours or less.

Table 4–Employees and Their Compensation

Year	Average number of employees	Total payroll (thousands)	Average annual earnings of employees	Average straight time hourly Rate	Earnings
1940	1,026,956	$1,964,481	$1,913	$0.74	$0.77
1945	1,420,266	3,859,907	2,718	0.93	0.97
1950[a]	1,220,784	4,620,518	3,785	1.58	1.65
1951[a]	1,276,000	5,336,198	4,182	1.76	1.84
1952[a]	1,226,663	5,338,175	4,352	1.84	1.94
1953	1,206,312	5,326,316	4,415	1.89	1.99
1954	1,064,705	4,855,100	4,560	1.94	2.05
9155	1,058,216	4,993,662	4,719	1.96	2.08
1956[e]	1,044,000	5,285,000	5,060	2.13	2.25

a Includes retroactive wage increases paid in subsequent years.
e Estimated.



By amendment dated August 28, 1956, a series of rules changes were added to the demands. These rules changes proposed a reduction in the basic day to 6 hours, payment of overtime after 6 hours on duty, establishment of punitive overtime in passenger service, increase in car basis graduated rates of pay, pay for 7 holidays, a 10 per cent night differential to apply to assignments starting between 2:00 p.m. and 4:00 a.m., and a fourth week of vacation after 15 years of service. Mediation proceedings commenced on November 12.

Engineers. The Brotherhood of Locomotive Engineers filed notices on September 1, 1956, and requested that basic daily rates be increased by 15 per cent effective October 1, 1956. Mediation proceedings commenced on December 7.

Yardmasters and Dispatchers. Agreements with the Railroad Yardmasters of America on January 25, 1956, and the American Train Dispatchers Association on February 1, 1956, provided increases in monthly rates of pay effective October 1, 1955, for employees represented by these organizations. These agreements conformed to the pattern established by contracts signed with other labor organizations late in 1955, and concluded the 1955 round of increases.

On March 27, 1956, the Railroad Yardmasters of America filed notices for an increase of $34.00 per month and on June 1, 1956, the American Train Dispatchers Association filed notices for an increase of 20 per cent in the basic rates of pay.

Pending settlement at the year's end were the demands of the trainmen, conductors, engineers, yardmasters and train dispatchers.

MATERIAL PRICES AND WAGES

THE COST of wage and price increases in 1956 was more than could be met through authorized increases in rates and fares and increased traffic.

Table 5–Railway Material Price Index

(Mid-Year 1947-1949=100)

Month		Materials and supplies (other than fuel)	Fuel (oil and coal)	All materials including fuel
December	1939	55.5	47.5	52.6
December	1945	72.1	69.3	71.1
October	1953	131.1	111.8	123.8
October	1954	132.8	109.1	123.9
October	1955	141.6	110.1	130.2
January	1956	143.2	112.7	132.0
April	1956	145.1	116.4	134.5
July	1956	144.3	117.3	134.3
October	1956	149.5	119.0	138.3

The strong influence of wage rates on railroad operating results is apparent from the fact that wages ordinarily represent nearly 63 per cent of railroad operating expenses. Next in importance in considering operating costs is the unit price of materials and supplies which make up 27 per cent of expenses. Not only did wage rates rise in 1956 as has been shown, but prices also increased significantly during the year.

From October 1955 to October 1956 fuel prices advanced by 8.1 per cent and other material prices increased 5.6 per cent for an overall rise in material prices of 6.2 per cent. The advance was steady throughout these 12 months except for a period of stabilized prices between April and July 1956. Prices in the third quarter of 1956 advanced sharply, owing largely to increases in prices of steel. The all-materials index on October 1, 1956, reached 138.3 per cent of the 1947-1949 average.

As was the case in 1955, a major part of the cost increases of 1956 took place in the third and fourth quarters and thus were not fully reflected in the year's financial returns or in the indices of wages and materials

Table 6–Material Prices and Wage Rates

(Average 1947-1949=100)

Year	Chargeout prices for all materials including fuel	Wage rates (All employees)	Material prices and wage rates combined
1939	52.0	56.5	55.2
1945	69.3	71.2	70.6
1949	106.4	110.0	108.9
1950	105.7	120.5	116.1
1951	117.5	134.1	129.1
1952	119.1	140.8	134.3
1953	122.0	144.2	137.5
1954	124.2	148.4	141.1
1955	126.1	150.0	142.8
1956 (prelim.)	134.2	162.6	154.1

costs for the year as a whole. However, the "chargeout" price index, which measures prices of materials at the time consumed in terms of their orginal purchase price, rose about 12 points in 1956, as did the index of wage rates, both increases being attributable in large measure to adjustments which took place in late 1955. Price and wage increases in late 1956 will necessarily have a similar effect on corresponding indices for 1957.

The index of chargeout prices for all materials and supplies in 1956 stood at approximately 134.2 per cent of the 1947-1949 average, while wage rates on the same basis averaged 162.6 per cent. These indices were, respectively, 6.4 per cent and 8.4 per cent above those of 1955. The combined index of wages and prices stood at 154.1 in 1956 as compared with 142.8 in 1955, a relative rise of 7.9 per cent in unit costs.

FINANCIAL RESULTS

RAILROAD earnings in 1956 remained below a level of reasonable adequacy and in fact fell below those of 1955, as increased costs of operation wiped out the combined benefits of increased traffic, increased revenues and improved efficiency. The rate of return on net investment, presently estimated at 3.95 per cent, barely exceeded the 3.74 per cent average return of the first ten postwar years, 1946-1955. Net income after fixed charges amounted to approximately $875 million, which was less than the net income in two of the three preceding years, 1953-1955. Thus, railroads in 1956 again failed to participate in the prosperity enjoyed by most other segments of the nation's economy.

Table 7–Condensed Income Account

10 months 1954-1956

	1954 (millions)	1955 (millions)	1956 (millions)
Total operating revenues	$7,780	$8,374	$8,792
Total operating expenses	6,159	6,290	6,732
Operating ratio (per cent)	79.16	75.11	76.57
Taxes	740	924	954
Net railway operating income	672	947	895
Rate earned (per cent)*	3.28	4.22	3.95
Net income after charges	485	749	711

* Rate of return on net investment for full calendar year (1956 estimated).

Table 8–Operating Revenues

10 months 1954-1956

	1954 (millions)	1955 (millions)	1956 (millions)
Freight	$6,476	$7,088	$7,472
Passenger	641	615	628
Mail	250	227	228
Express	93	96	96
All other	320	348	368
Total	$7,780	$8,374	$8,792

As shown in Table 7, operating revenues for the first ten months of 1956 aggregated $8,792 million, an increase of $418 million, or 5.0 per cent, over the corresponding 1955 period, and $1,012 million over the like period of 1954, a year of depressed traffic and earnings. Operating expenses in the first 10 months of 1956 amounted to $6,732 million, about $442 million, or 7.0 per cent, above the comparable 1955 period. This greater relative increase in expenses as compared with the increase which took place in gross, caused the operating ratio to increase slightly from 75.11 per cent in 1955 to 76.57 per cent in 1956.

Railway tax accruals amounted to $954 million in the first 10 months of 1956, an increase of $31 million over the corresponding 1955 period. While federal income taxes declined by approximately $28 million due to reduced earnings, this reduction was more than offset by increases in payroll taxes and in state and local taxes. Payroll taxes increased by $44 million to a total of $279 million for the 10-month period, as the result of an increase of from one-half of one per cent to one and one-half per cent in the unemployment payroll tax rate effective January 1, 1956. All other taxes, consisting chiefly of state and local taxes, amounted to $330 million, an increase of $15 million over 1955.

After tax accruals and payment of operating rents, net railway operating income for the first 10 months of 1956 totaled $895 million, a reduction of $52 million, or 5.5 per cent, under the like period of 1955. Tax credits, representing deferral of income taxes through accelerated amortization of defense facilities, again reduced taxes and increased reported earnings in 1956.

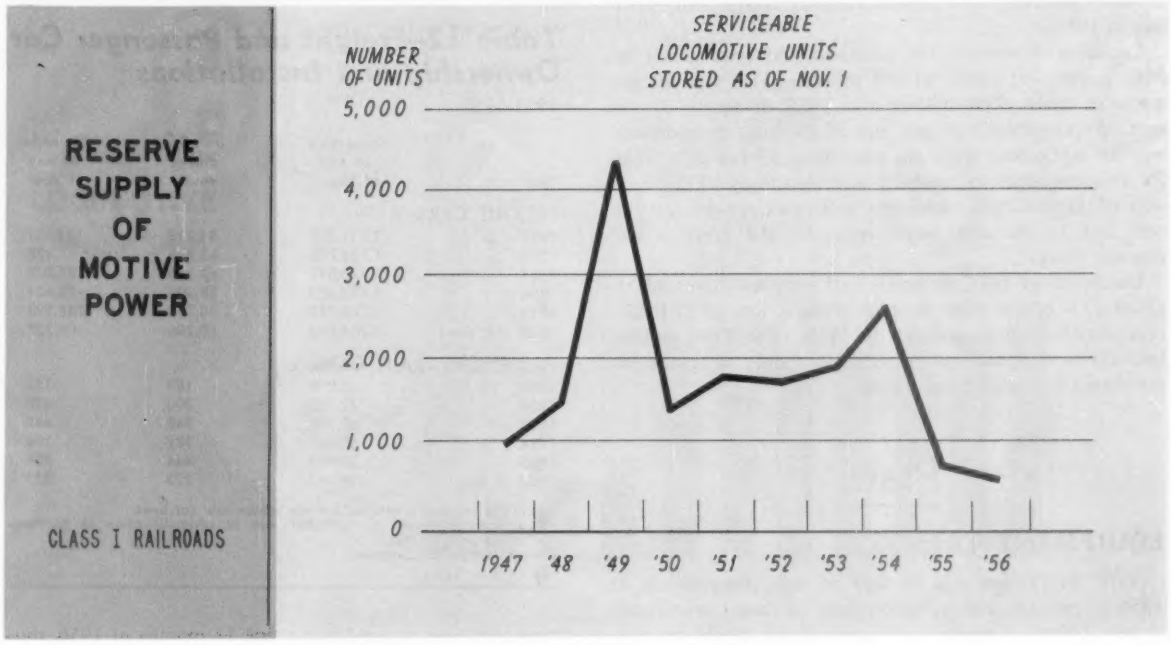
Net income, which also was benefited by such temporary tax deferrals, approximated $711 million for the first ten months of 1956, down $38 million from the 1955 period, but up $226 million over the ten-month period of 1954.

Revenue from freight service, benefiting from rate increases averaging 5.5 per cent effective March 7, amounted to $7,472 million in the first ten months of 1956, an

Table 9–Operating Expenses

10 months 1954-1956

	1954 (millions)	1955 (millions)	1956 (millions)
Maintenance of way	$1,134	$1,150	$1,183
Maintenance of equipment	1,450	1,476	1,577
Transportation	3,009	3,088	3,339
Traffic, general, and other	566	576	633
Total	$6,159	$6,290	$6,732



increase of $384 million, or 5.4 per cent, over the 1955 period. Thus, freight revenue, which accounted for 85 per cent of total operating revenues in 1956, contributed 92 per cent of the overall increase of $418 million in operating revenues in 1956 over 1955. Passenger revenue, which amounted to $627 million in the ten-month period, was up about $13 million over the corresponding period last year, largely because of a 5 per cent increase in passenger fares other than commutation, made effective in May 1956. Mail revenue aggregated $228 million in the ten-month period, about $1 million more than in 1955. Revenues accruing to the railroads from express service remained at $96 million in both periods, while all other revenue aggregated $368 million, $20 million more than in the ten months of 1955.

All principal operating expense accounts showed increases for the first ten months of 1956 compared with the like period of 1955. Transportation expenses, the largest of the group, increased by 8.1 per cent, while the two maintenance accounts—way and structures, and equipment—increased respectively by 2.9 per cent and 6.9 per cent. These increases are moderate in view of curtailed maintenance programs in effect during 1954 and 1955 and increased unit costs experienced in 1956. Actual maintenance charges for way and structures and equipment combined, excluding depreciation and retirements, were up $122 million or 5.6 per cent over 1955, but were $251 million below those of 1953.

Net railway operating income for 1956 shown in Table 10 is an estimate for the full year. The total of $1,065 million represents a reduction of approximately $63 million under 1955, and a rate of return on the railroads' net property investment of about 3.95 per cent. Excluding tax deferrals arising from accelerated amortization, the precise amount of which is not presently known, net railway operating income in 1956 was probably less than $900 million, and the rate of return barely 3.3 per cent.

Table 10–Rate of Return, 1947-1956

Year	Net railway Operating income (millions)	Rate of return on investment after depreciation
1947	$ 781	3.44%
1948	1,002	4.31
1949	686	2.88
1950	1,040	4.28
1951	a 943	a 3.76
1952	a 1,078	a 4.16
1953	a 1,109	a 4.19
1954	a 874	a 3.28
1955	a 1,128	a 4.22
1956 (est.)	a 1,065	a 3.95

a Includes tax credits (deferrals) resulting from amortization of defense facilities.

Table 11–Capital Expenditures and Purchases, 1947-1956

Year	Gross capital expenditures (thousands)	Purchases of fuel, materials & supplies (thousands)
1947	$ 864,689	$1,909,209
1948	1,273,484	2,183,331
1949	1,312,200	1,641,406
1950	1,065,842	1,739,908
1951	..1,413,995	2,175,859
1952	1,340,912	1,817,750
1953	1,259,797	1,920,481
1954	820,246	1,424,761
1955	908,443	1,637,075
1956 (est.)	1,250,000	1,900,000

EXPENDITURES AND PURCHASES

AN UPTURN in traffic and earnings in the latter part of 1955 gave impetus to capital improvement programs

curtailed because of depressed railroad traffic and earnings in 1954.

Capital expenditures for additions and betterments in 1956 aggregated about $1,250 million. This was an increase of nearly $350 million over 1955, or nearly 40 per cent. Approximately 67 per cent of the total expenditures was for equipment while the remaining 33 per cent went for improvements to roadway and structures. This division of expenditures compares with averages of 69 per cent and 31 per cent, respectively, for the previous ten postwar years.

Purchases of fuel, materials and supplies increased to about $1.9 billion over the near postwar low of $1.6 billion spent for such materials in 1955. The $300 million increase is the result of increases not only in quantities purchased but also in unit prices.

Plant

EQUIPMENT TRENDS

THE BEST that can be said of equipment trends in 1956 is, perhaps, that adverse trends of recent years were slowed, halted, or reversed. Progress of the freight car program was frustratingly slow, as carbuilding shops felt the pinch of the steel shortage, but railroads effected an increase in serviceable freight car ownership. Supply of motive power continued tight, but the reduction during 1956 in locomotive units owned was the smallest annual decrease in 5 years. Passenger train car ownership continued to shrink, but public interest in rail travel was stimulated by the introduction of passenger trains of completely new design.

Freight cars. Production of new freight cars in 1956 was less than had been expected in view of the near-record backlog of 135,000 cars on order at the beginning of the year. Car shops were plagued by chronic steel shortages, accentuated by the midsummer shutdown of the steel industry due to labor trouble, and new car deliveries averaged only 4,700 a month. While this rate exceeded such deliveries in 1954 and 1955, it was disappointingly low.

A small increase of about 11,000 cars in freight car ownership accomplished in the first 11 months was chiefly the result of a reduction in the freight car retirement rate from nearly 6,000 cars a month in 1955 to little more than 3,800 cars a month in 1956. This was the lowest retirement rate experienced since World War II.

Railroads also added a substantial number of cars to the serviceable fleet by making a further reduction in the percentage of cars held out of service for repairs. On October 1, 1956, at the seasonal peak of freight traffic, only 4.1 per cent of freight cars were unserviceable, as compared with 5.1 per cent on the corresponding date in 1955. The reduction of one full point in this percentage meant the addition of some 16,000 cars to the serviceable supply. By November 1, 1956, the bad order percentage had been further reduced to 4.0 per cent, and a goal established by the railroads at the annual meeting of the Association of American Railroads in November 1955 was thus attained. At the 1956 AAR annual meeting on November 16, a new goal of 3 per cent was adopted for 1957.

Despite the heavy backlog of orders and the slow rate of deliveries, railroads continued during 1956 to place additional orders for new freight cars. More than 26,000 new cars were ordered in the first 11 months of 1956, thus replacing about half the orders removed from carbuilders' books by deliveries during that period. Placement of this volume of orders, in the absence of the incentive of accelerated tax amortization available in other recent years, gave promise of a sustained program of freight car building for many months ahead.

Freight car shortages in 1956, as in 1955, reached serious proportions during the fall period of peak car demand, but car supply was generally better in 1956 than in the previous year. The maximum car shortage was 18,951 cars a day in the week ended September 29, 1956, as compared with a maximum shortage of 22,659 cars a day in the week ended October 29, 1955.

Passenger cars. Statistically, passenger car trends in 1956 followed those of other postwar years. The number of passenger-train cars in the service of Class I railroads and the Pullman Company declined by 1,132 in the first 6 months of the year, nearly equaling the average annual decline of 1,381 cars in the preceding five years. New installations continued at the 1955 average rate of 37 per month, and the number of new cars on order was not materially changed.

The principal development in the field of passenger equipment had to do with innovations in car design. Several lightweight, low-slung trains were tested and placed in regular service on relatively short runs in the East and Midwest; while newly designed high-level cars and a new "Slumbercoach" went into long-haul service in the West. Reaction of the traveling public to these novel types of equipment may be expected to influence future trends in passenger car design.

Locomotives. A continuing reduction in locomotive ownership in 1956, combined with a higher level of freight traffic, resulted in a general tightening of the motive power situation on most railroads. By October 1, 1956, the number of serviceable locomotives in reserve had fallen to the lowest point in 35 years. Intensive utilization and the superior performance of modern locomotives enabled the railroads to meet all requirements in 1956, but the absence of a more normal reserve supply indicated a need for con-

Table 12–Freight and Passenger Car Ownership and Installations

1951-1956

Year	Ownership at end of year	Installed during year	On order at end of year
FREIGHT CARS: a			
1951	1,751,731	84,218	104,831
1952	1,756,700	63,748	67,138
1953	1,776,017	67,548	27,678
1954	1,735,553	28,405	13,624
1955	1,700,253b	35,738	135,293
1956 (11 mos.)	1,704,950	53,206	108,327
PASSENGER-TRAIN CARS: c			
1951	43,598	183	152
1952	42,167	200	420
1953	40,755	348	449
1954	38,875	389	396
1955	37,597	444	394
1956 (6 mos.)	36,465	223	325

a Excludes railroad controlled private refrigerator car lines.
b Subsequently revised to 1,694,097 due to reclassification of railroads effective Jan. 1, 1956.
c Includes Pullman Company.

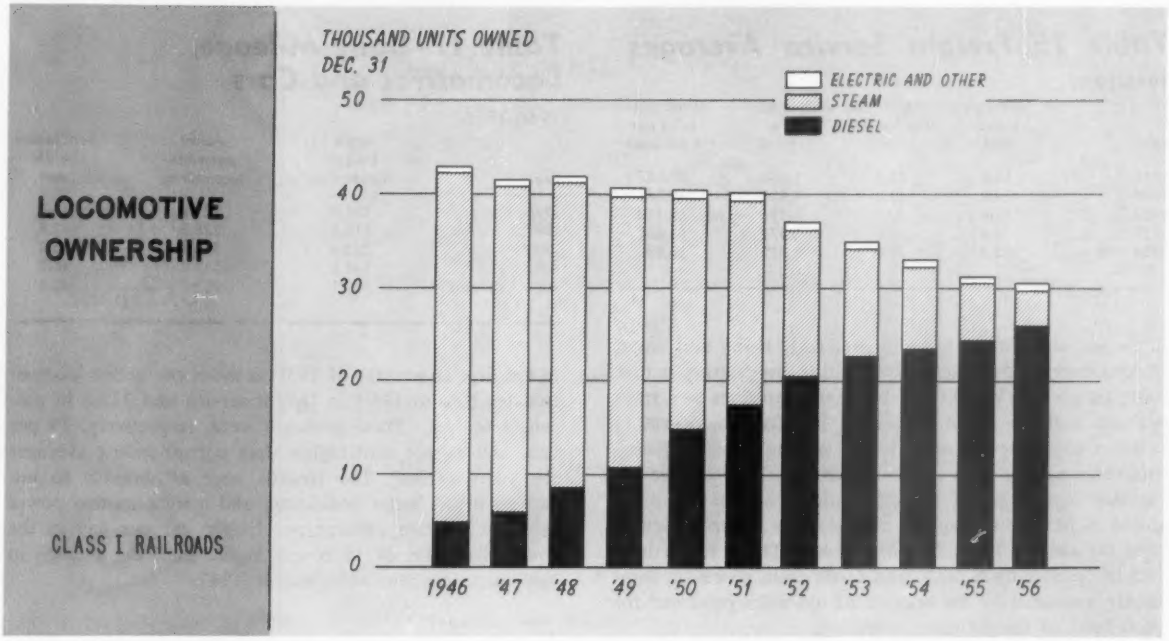


Table 13–Locomotive Ownership, Installations and Orders 1951-1956

Year	Diesel-electric (units)	Steam	Electric & others (units)	Total (units)
OWNERSHIP AT END OF YEAR				
1951	17,493	21,747	796	40,036
1952	20,492	16,078	773	37,343
1953	22,503	11,787	719	35,009
1954	23,531	8,650	691	32,872
1955	24,786	5,982	661	31,429
1956 (est.)	26,170	3,500	630	30,300
INSTALLED DURING YEAR				
1951	3,490	18	6	3,514
1952	3,035	19	8	3,062
1953	2,122	15	4	2,141
1954	1,110	—	16	1,126
1955	1,070	—	27	1,097
1956 (est.)	1,400	—	12	1,412
ON ORDER AT END OF YEAR				
1951	2,186	19	2	2,207
1952	914	15	29	958
1953	546	—	25	571
1954	483	—	10	493
1955	827	—	27	854
1956 (Dec. 1)	721	—	22	743

tinued purchasing of locomotives at not less than the 1956 rate.

Locomotive ownership declined by about 1,100 units in 1956, as an estimated 1,400 new diesel units were installed and nearly 2,500 steam locomotives were retired. About 3,500 steam locomotives remained at the close of the year, representing a reduction of 34,000 in a period of 10 years. Diesel units at the close of 1956 totaled approximately 26,170, an increase of nearly 22,000 over the ten-year period. The resulting decrease of 12,000 units in total locomotive ownership has been compensated for by an increase in average tractive force per unit and by the greater availability and utility of modern power units.

The Class I railroads were approximately 90 per cent "dieselized" in 1956, as diesel locomotives handled over 88 per cent of all gross ton-miles in road freight service, about 91 per cent of all passenger train car-miles and more than 93 per cent of yard switching service. Steam locomotives which just ten years ago were performing nearly 90 per cent of freight service, 80 per cent of passenger service, and 70 per cent of yard service, accounted in 1956 for only 9 per cent, 2.7 per cent, and 6.3 per cent of such work. Most of the remaining active steam power in operation in 1956 was concentrated on just 10 railroads—4 in the East, one in the South, and 5 in the West.

EFFICIENCY AND ECONOMY

CONTINUING the trend of the entire postwar period, railroad operating statistics for 1956 reveal further gains in efficient operation of the railroad plant. Improved efficiency and economy of operation have been vital factors

Table 14–Locomotive Utilization

PERCENTAGE OF SERVICE PERFORMED, BY TYPE OF POWER

Type and year	Road service, freight	Road service, passenger	Yard service
STEAM:			
1946	88.15%	78.24%	69.17%
1951	45.51	30.89	30.97
1956 (9 mos.)	9.07	2.69	6.28
DIESEL:			
1946	9.73	15.28	29.46
1951	52.65	62.73	67.79
1956 (9mos.)	88.33	90.86	39.07
OTHER			
1946	2.12	6.48	1.37
1951	1.84	6.38	1.24
1956 (9 mos.)	2.60	6.45	0.65

Table 15–Freight Service Averages

1946-1956

Year	Average speed mph	Net tons of freight Per loaded car	Net tons of freight Per train	Gross ton-miles per train-hour
1946	16.0	31.3	1,086	37,057
1949	16.9	31.4	1,138	42,346
1952	17.6	32.5	1,296	49,113
1955	18.6	32.2	1,372	55,662
1956 (10 mos.)	18.5	33.0	1,422	56,848

in the carriers' efforts to combat steadily rising unit costs.

An inherent advantage of railroad transportation is that more freight can be added to a car or more cars to a train without causing a proportionate increase in operating costs. Continuing increases in the pulling power of locomotives, together with improvements in roadway, including new signaling and communications systems, have resulted in heavier average train loads year by year moving over the road at faster average speeds. The combined effect of heavier train loads and faster train speeds is commonly measured by the number of ton-miles produced for each hour of freight train operation.

As shown by Table 15, gross ton-miles per train-hour moved to a new high in 1956. This average increased by more than 50 per cent between 1946 and 1956, and showed consistent increases throughout the period.

Increases in average freight train speeds have been less spectacular, but impressive nevertheless, when considered in the light of increases in average train weight. Freight train speed averaged 18.5 miles an hour in the first ten months of 1956, nearly matching the 1955 average but just short of the record 18.7 miles per hour set in 1954. Average train speeds include hours spent switching at way stations and therefore understate average speed of freight trains actually on the road. The average speed in 1956 was 15.6 per cent faster than that of 1946 despite an increase of 30.9 per cent in average tons of freight per train.

In passenger service, average train speed moved on to another new high speed of 40.0 miles an hour in the first nine months of 1956, reflecting the benefits of both plant improvements and, to some extent, curtailment of local and branch line service. The average number of cars per passenger train also increased slightly in 1956, and the number of passengers per car was higher than in other recent years, but well below the average ten years earlier.

Utilization of locomotives established new high records

Table 16–Passenger Service Averages

1946-1956

Year	Average train speed (mph)	Passengers per car	Cars per train (locomotive trains)	Car-miles per train-hour
1946	35.5	24.7	10.09	338
1949	37.0	18.0	9.78	341
1952	38.3	18.1	10.36	375
1955	39.8	17.8	10.50	392
1956 (10 mos.)	40.0	18.2*	10.57	396

* 9 mos.

Table 17–Daily Mileage, Locomotives and Cars

1946-1956

Year	Active freight locomotives	Active passenger locomotives	Serviceable freight cars
1946	115.9	221.8	45.2
1949	112.5	228.5	42.9
1952	126.8	266.1	46.2
1955	147.2	312.8	48.2
1956 (10 mos.)	149.1	323.2	48.4

in the first 10 months of 1956 as miles per active locomotive-day rose to 149.1 in freight service and 323.2 in passenger service. These averages were, respectively, 29 per cent and 46 per cent higher than corresponding averages ten years earlier. The records were attributable to improved plant, better utilization, and a tight motive power supply. Average mileage per freight car per day in the first ten months of 1956 was higher than the average in any other postwar year except 1947.

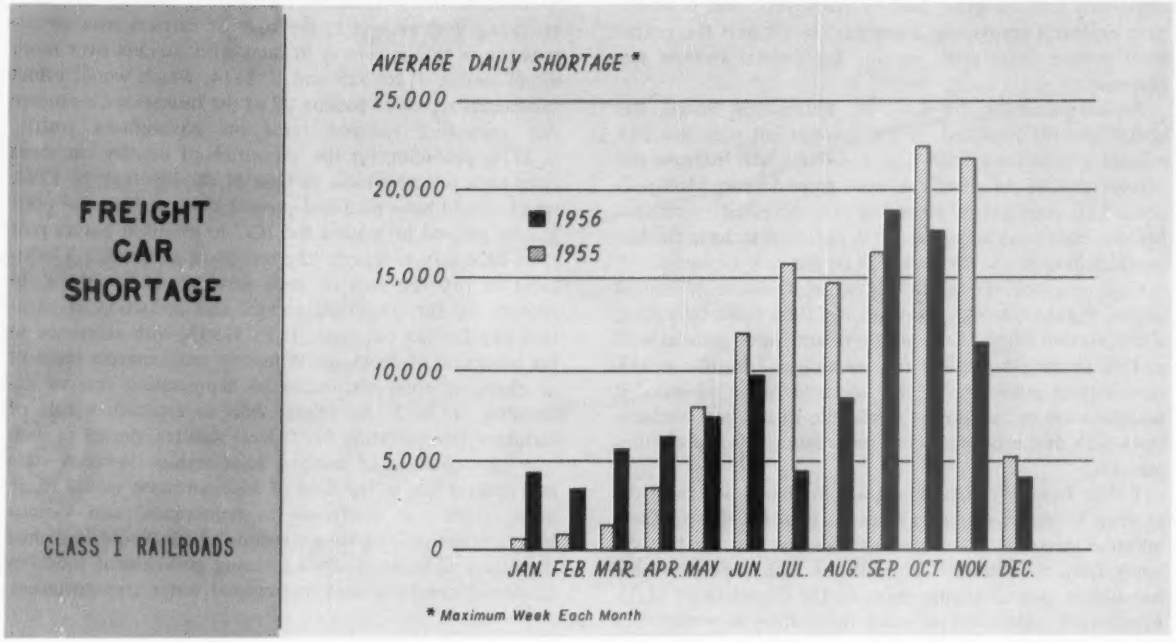
Policy and Regulation

STUDIES AND REPORTS

SO FAR as studies and reports in the transportation field are concerned, the year 1956 stood somewhat in the shadow of 1955, the year in which the highly significant "Cabinet Committee" report had been issued calling for revision of governmental regulatory practices. That document, and the report of the Second Hoover Commission, also issued in 1955, continued to have important influence upon legislative developments during 1956. The latter year witnessed, however, the release of a number of noteworthy studies.

Van Fleet Report. General James A. Van Fleet, retired former commander of the U. S. Eighth Army in Korea, completed his authoritative study of the vital role of the railroads in defense and war. His analysis went beyond the matter of national dependence on the railroads for wartime transportation on the home front and emphasized the demonstrated ability of railroads to withstand air attack in actual combat areas, as well as the essentiality of railroads in providing logistical support for front line troops. This valuable work, published by the Association of American Railroads under the title "Rail Transport and the Winning of Wars," attracted widespread and favorable attention as a major contribution toward sound thinking on this important subject.

RPI Report. A study prepared by Transportation Facts, Inc., for the Railway Progress Institute and released in November 1956 under the title, "A Ten-Year Projection of Railroad Growth Potential," reviewed past growth of intercity freight and passenger traffic in the United States, analysed present-day distribution of such traffic among the various carriers, and set forth estimates of railroad traffic and equipment requirements through 1965. The report stressed the inherent economy of railroad operation and estimated that railroad freight traffic would increase



by about 41 per cent between 1955 and 1965, necessitating substantial additions to the railroad plant.

NARUC Report. The National Association of Railroad and Utilities Commissioners at its annual meeting in San Francisco on July 27, 1956, received the fifth in a series of reports from its special committee on cooperation with the ICC in the study of the railroad passenger deficit problem. The report restated earlier appeals of the committee for cooperative efforts by state regulatory bodies by railroad managements, by railroad labor and by departments of the federal government whose policies, in the words of the report:

". . . have fostered the development and prosperity of less economical and less essential competing forms of transportation, whose excise taxes have discouraged travel by means of all commercial carriers, and whose diversion of traffic to railroad competitors has weakened and reduced the potential capacity of the principal carriers on which the nation must depend for mass transportation in time of emergency."

The report also questioned the soundness of the cost-allocation formula prescribed by the ICC for determining the amount of the annual passenger-service deficit and, referring to the investigation of the whole subject ordered by the commission on March 19, 1956, under Docket No. 31954, urged the National Association and its member bodies to give this matter their "immediate and careful consideration . . . and active participation."

LEGISLATION

THE SECOND session of the 84th Congress was active in matters relating to transportation. Important legislation was enacted particularly with respect to federal highway aid, trip-leasing of motor trucks, increased railroad retirement benefits, and amendments of some tax provisions.

In Public Law 627 Congress provided for a vastly expanded, long-range federal highway-aid program and its financing, with particular reference to the so-called interstate system of 41,000 miles. For the first time Congress adopted the policy that federal highway expenditures should be covered by revenues from highway user taxes and established a highway trust fund for this purpose.

Also, the 1956 act, recognizing the special burdens placed on highway facilities by heavy vehicles, imposes a special gross weight tax on vehicles weighing, with load, more than 26,000 lb and limits the weight of vehicles on the interstate system to the greater of either the existing limit in the state or 18,000 lb on a single axle, 32,000 lb on a tandem axle, and 73,280 lb gross weight. It limits the size of vehicles to a width of not more than 96 in. Having accepted these basic principles, Congress directed the secretary of commerce to make further studies with respect to both user taxes and limitations upon vehicle weight and size, and to report not later than March 1, 1959.

In other important legislation Congress after extended consideration of the problem acted to restrict the authority of the ICC with respect to the practice of trip-leasing of motor trucks. The bill as introduced would have given legislative sanction to the practice generally; but before passage (Public Law 957) it was amended to confine its effect to trucks owned by farmers or certain farm groups, or to private carriers engaged in transportation of property embraced in Section 203(b)(6) of the Interstate Commerce Act (the agricultural exemption) or of perishable products manufactured from perishable property of a character embraced within that section, subject also to certain limitations as to the direction of the return movement of the vehicle in relation to the area in which such vehicle is based.

The Railroad Retirement Act was amended by Public Law 1013 to provide generally for a 10 per cent increase in benefits to employees without any provision for a tax increase to finance the added benefits. As originally introduced the bill would have provided for an across-the-board increase of 15 per cent in benefits. to be financed by an increase in payroll tax rates from 12½ per cent to 14½ per cent, with one-half of this amount to be paid by

employees and the other half by employers; and it would have excluded employees' taxes paid to support the retirement system from gross income for federal income tax purposes.

As estimated by the Railroad Retirement Board, the added benefits provided by the amendment will cost $83 million a year on a level cost basis and will increase the present annual deficit of the fund from $86 to $169 million. This problem of financing the increased retirement benefits under the amended act is expected to have further consideration in the 1957 session of the new Congress.

Congress took action also on two tax matters of limited scope. Public Law 628 amended the 1954 Code by adding a new section which concerns the treatment of gain, as well as loss, in certain railroad reorganizations. Insofar as this new section provides for the non-recognition of gain, it equalizes the tax treatment applicable to railroad corporations with that accorded other corporations in like circumstances.

Public Law 796 exempts certain foreign travel from the existing 10 per cent tax on amounts paid for the transportation of persons. In essence, it provides that the tax will apply from the point of origin in the United States to the last station stop or border point on the Canadian or Mexican border unless the ultimate destination is within 225 miles of these borders, in which event the tax will obtain on the amount paid for transportation from the point of origin to the point of destination. This exemption thus provides relief with respect to only one of the competitive and discriminatory aspects of the tax on travel in for-hire vehicles.

Comprehensive testimony on the seriously harmful effects of the transportation taxes was presented before the House Ways and Means Committee during hearings in early December 1956. Repeal of these taxes which have contributed so heavily to the financial troubles of the nation's for-hire carriers by encouraging "do-it-yourself" practices in transportation is high on the list of hoped-for legislative accomplishments in 1957.

Many other bills considered in 1956 were not passed, but some of these matters will likely have further attention in the new Congress in 1957. Perhaps the most important of these were H.R. 6141 and related bills designed to carry out recommendations contained in the Report of the Presidential Advisory Committee on Transport Policy and Organization. Extensive hearings on these bills were held commencing on April 24, 1956, and lasting until June 20, by the Transportation and Communications Subcommittee of the House Committee on Interstate and Foreign Commerce, during which time many witnesses representing government, shippers, the various agencies of transportation and the public appeared or filed statements of their views. Greater freedom in competitive rate making was a principal issue in these hearings.

On July 3, 1956, it was announced that the staff of the House Committee had been directed to prepare a digest of the testimony, and analysis of the different positions on major proposals, so that "the consideration of these important proposals affecting transport policy may be assisted upon the return of the committee at the beginning of the next Congress." The Senate Committee on Interstate and Foreign Commerce took no action on S. 1920, a companion bill identical to H.R. 6141.

Other important bills respecting transportation which were considered but not passed in the 1956 session of Congress included the following: H.R. 6208, the "circuity bill," to make Section 4(1) of the Interstate Commerce Act self-operating with respect to the right of carriers over circuitous routes to compete as to rates with carriers over more direct routes; H.R. 525 and S. 2114, which would effect substantial repeal of Section 22 of the Interstate Commerce Act regarding reduced rates on government traffic; S. 2770, providing for the imposition of penalty per diem rates on a selective basis in time of car shortage; S. 1292, which would have modified present law requiring the postmaster general to request the ICC to establish parcel post rates necessary to insure "the receipt of revenue . . . sufficient to pay the cost of such service"; H.R. 10833, to provide for the continued accrual and deduction of vacation pay for tax purposes; H.R. 11893, with reference to tax treatment of depreciation reserve requirements incident to changing from retirement to depreciation reserve accounting; H.R. 3 and related bills to establish a rule of statutory interpretation for federal statutes, drawn in such way that changes of existing relationships between state and federal law in the field of transportation would likely have resulted in confusion in regulations; and various bills containing intricate provisions which would have had the effect of substantially increasing government subsidies to inland, coastwise and intercoastal water transportation.

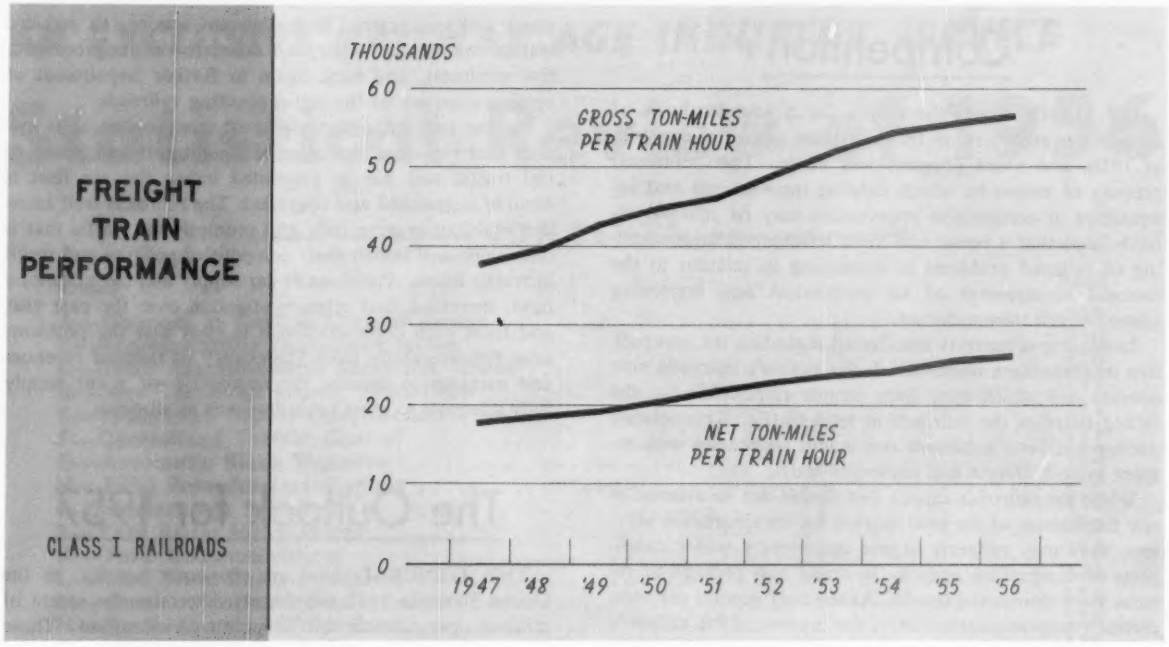
ADMINISTRATIVE PROCEEDINGS

Aside from rate matters, other important administrative proceedings in 1956 pertained to such matters as per diem and demurrage charges, the ICC investigation of railroad passenger-service deficits, leasing and interchange of motor vehicles, and rules and regulations governing the inspection, testing, maintenance and use of certain types of equipment.

Per Diem. Litigation before the ICC continued in 1956 regarding the per diem rate of compensation for the use of freight cars when off the lines of the owning railroad. On December 8, 1955, the commission in Docket No. 31358 had made public its report of October 17, 1955, ruling that per diem charges of $1.75, $2.00 and $2.40 were not in excess of reasonable compensation during the time each was in effect. A petition for reconsideration was filed by defendants on February 6, 1956, and denied by the commission on July 16, 1956. On November 21, 1956, defendants filed a complaint in the U. S. District Court for the District of Massachusetts against the U. S. and the ICC, asking the court to enjoin, set aside and annul the report and orders of the commission in this proceeding. Sixty days are allowed in which to answer the complaint.

Another per diem dispute before the commission in 1956, carried over from 1955, was that covered by Dockets 31774 and 31824, in which a number of railroads sought modification of the Section 5a agreement relating to procedure for establishment of car hire rates. After filing of briefs February 20, 1956, a proposed report was issued by the examiner April 25, 1956, recommending that the Section 5a agreement be modified only to the extent of granting voting power on per diem matters to the presently non-voting representative of the American Short Line Railroad Association at meetings of the General Committee, Operating-Transportation Division, Association of American Railroads. After filing of exceptions to the proposed report, both cases were set for oral argument, but by the close of the year date of argument had been twice postponed.

Under procedures prescribed in the Section 5a agree-



ment, based on a detailed cost study conducted in 1956, a freight car per diem rate of $2.75 was approved to become effective January 1, 1957.

Demurrage Charges. The railroads on June 28, 1956, filed with the ICC a tariff supplement providing for a general increase in demurrage charges and amendment of the demurrage rules, so as to provide more adequate compensation for car detention and to promote better utilization of the freight car supply. The amendments were filed to become effective August 1, but were subsequently postponed to September 1. Following receipt of nearly 500 protests and requests for suspension, Division 2 of the commission on August 2, 1956, entered an order instituting an investigation, I. & S. Docket No. 6646, and suspending operation of the tariff to and including March 31, 1957. Hearings in the matter began on November 19, 1956, and the proceedings were scheduled to continue into 1957.

Passenger Deficit. The ICC by order dated March 19, 1956, Docket No. 31954, instituted an investigation into and concerning the passenger-train service deficit and made all passenger-carrying railroads subject to the jurisdiction of the commission respondents in the proceeding. Upon conclusion of a prehearing conference September 5, 1956, to consider a list of suggested subjects or fields of investigation, the matters of procedure and scope were taken under consideration by the commission. On November 16, 1956, the commission released a "Proposed Formula for Determining Costs of Providing Rail Passenger-Train Service by Classes of Traffic and Comparing the Costs with the Revenues." Later notice gave interested parties until January 25, 1957, to file criticisms and suggestions, and scheduled an informal conference with the commission's staff for January 30, 1957.

Safety Matters. Several formal and informal proceedings before the ICC in 1956 were concerned with accident reports and other matters pertaining to safety. In Ex Parte No. 179, the commission's new rules for inspection and testing of multiple unit cars went into effect on April 1, 1956. Revised rules governing monthly reports of railroad accidents were issued late in the year to become effective January 1, 1957. Related matters still pending at the year's end included: The confidential nature of the so-called Form T accident reports; revision of rules and instructions for the inspection and testing of locomotives other than steam (Ex Parte No. 174); interpretation of ICC locomotive inspection rule 203 (Ex Parte No. 203); and petition by certain of the railroad brotherhoods for promulgation and enforcement of rules, standards and instructions for the installation, inspection, maintenance and repair of power brakes (Docket No. 31938).

Leasing of Motor Vehicles. The ICC on December 3, 1956, issued in Ex Parte No. MC-43 a complete set of regulations to govern leasing and interchange of motor vehicles, to become effective February 1, 1957. In describing the newly adopted regulations the commission said that the 30-day minimum lease period rule "is the very essence of the reforms which are needed" and it further observed that "the hard core of the problem confronting the commission . . . has been the owner-operator trip-lease and its attendant evils, such as widespread indifference to carrier responsibility, to safety of operations, and to the scope of carrier operating authority."

Motor Carrier Commodity Statistics. In December 1955 the ICC reissued in revised form its proposed order with respect to reporting by motor carriers of freight commodity statistics. Numerous protests having been received from motor carriers, the commission heard oral argument with respect to the petitions in opposition on October 2, 1956.

First Class Mail by Air. During 1956 litigation was concluded over the legality of flying 3-cent letter mail, in which it was held that an experimental program of flying such mail is within the statutory authority of the postmaster general. Also concluded were proceedings before the Civil Aeronautics Board in which the rates of compensation to the air lines for experimental flying of such mail proposed by the Post Office Department were made final.

Competition

ON MANY fronts the search for a sounder basis of competitive enterprise in transportation gained momentum in 1956, and some progress was made. This continued probing of means by which existing impediments and inequalities of competitive opportunity may be relieved affords hope that a better and more widespread understanding of railroad problems is developing in relation to the national requirement of an economical and improving system of rail transportation.

Increasing concern is manifested regarding the competitive disadvantages under which the nation's railroads now operate and which have been largely responsible for the falling share of the railroads in total traffic. This relative decline has been persistent and is still continuing with respect to both freight and passenger traffic.

While the railroads cannot and should not be assured of any fixed share of the total market for transportation services, they may properly expect opportunity under conditions of competitive equality to arrest and perhaps to reverse these downward trends. As the only general common carrier transportation industry, the interest of the railroads in such opportunity to determine their true relative place in the transport economy is no different from the essential interest of the nation in preserving an efficient, improving and financially strong system of transportation by railroad.

Yet in important respects government policies continue to favor other forms of transportation with which the railroads as self-supporting and tax-paying business enterprises must compete. These policies include: Undue regulatory restraints upon the railroads which, as fully regulated common carriers, are subject to rate and other controls that their competitors largely or wholly escape; the provision by government at taxpayers' expense of highway, waterway and airway facilities for the use of which competitors of the railroads make inadequate compensation or none at all; and the continued imposition, more than ten years after the wartime emergency that led to their enactment, of the federal excise taxes on the for-hire transportation of freight and passengers.

It is increasingly recognized that rather than such discriminatory and preferential treatment, it should be the neutral aim of government with neither favor nor restraint to encourage the economical development of all methods of transportation on an equal basis in this age of competitive transportation.

One of the most serious consequences of these preferential government policies is upon railroad earnings and necessary capital formation. Difficulties of the railroads in this respect continue to be aggravated, also, by rising costs of labor and materials, since these factors constitute such an exceptionally large part of total operating costs.

The railroads have continuing need for large amounts of capital funds to improve their properties, equipment, and operation, but these requirements will not be fully met unless the railroads can achieve a sufficient level of earnings to provide the means for capital formation and investor confidence. This matter of capital requirements relates fundamentally to the railroads' competitive prospects, for unless there is financial ability to make cost-reducing and service-improving investments the course of events will inevitably go in a vicious downward spiral from inadequate earnings to technological lags, to deteriorating plant and equipment, to inadequate service, to reduced traffic volume, to higher unit costs, to resulting competitive weakness, and back again to further impairment of earning capacity of the self-supporting railroads.

As one very important aspect of this problem, it is evident that recurring shortages of freight cars and losses of rail traffic will not be prevented unless the car fleet is steadily augmented and upgraded. The railroads well know that inability to serve fully and promptly the traffic that is obtainable will impair their competitive position and result in traffic losses. Problems of car supply and car utilization have, therefore, had primary attention over the past year and from such consideration it is clear that the problems arise fundamentally from inadequacy of railroad revenues and earnings to finance the acquisition of a car supply fully adequate to meet peak demands at all times.

The Outlook for 1957

THE GENERAL level of economic activity in the United States in 1957 will largely determine the extent of railroad operations in the 12-month period ahead. Those forecasters who have ventured to consider prospects for 1957 view the coming year with moderate optimism.

On the basis of such prospects it appears that the railroads in 1957 may handle a traffic aggregate equal to 1956 and perhaps somewhat higher.

The railroads must furnish the basic transportation needs of the nation and at this critical period in world affairs attention may well be directed to them. If developments so require, they would have to take over, as they did 15 years ago, the bulk of the traffic that must be moved in a period of national emergency. No other agency of transport, nor all of them together, can do the job so well or with the expenditure of so little additional manpower, fuel and other critical materials.

What, it may be asked, are the immediate needs of the railroads to enable them to continue to meet the transportation needs of the railroads to enable them to continue to meet the transportation needs of the nation?

The basic railroad network remains intact notwithstanding continuing abandonments of unprofitable branch lines. The capacity of existing trackage and yards can and should be increased by a higher standard of maintenance and by wider application of such modern facilities as centralized traffic control and so-called "push button" yards. Equipment supplies, both cars and locomotives, are low and need considerable expansion, although under emergency conditions greater utilization of existing units could be obtained.

In order to do these things, the railroads need greater earnings within the limits of a fair return. It is hoped that the ICC will act promptly on proposals to revise the rate and fare structures for the purpose of attaining such a result.

The railroads hope for the delivery of more new units of equipment in 1957 than they were able to obtain in 1956. They hope for relief for their customers from the excise tax of 3 per cent imposed on freight bills and the 10 per cent excise tax imposed on passenger fares. They hop for progress to be made in the Congress for relief in rate-making so as to provide desired and greater equality of competitive opportunity.

AN EXCLUSIVE RAILWAY AGE INDUSTRY SERVICE . . .

Statistical Review of 1956

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A CHANGES IN CASH & CURRENT ASSETS

	Cash & Temporary Cash Investments Sept. 30		Inc. or Dec. %	Total Current Assets		Total Current Liabilities		Excess of Current Assets over Liabilities		Inc. or Dec. %
	1956	1955		End of Sept. 1956	End of Sept. 1955	End of Sept. 1956	End of Sept. 1955	End of Sept. 1956	End of Sept. 1955	
AT&SF	$101,914,054	$145,700,236	−30.1	$187,240,625	$222,983,593	$92,670,058	$103,805,807	$94,570,567	$119,182,931	−20.7
ACL	14,521,638	18,074,938	−19.7	48,500,824	48,466,641	22,087,123	20,149,167	26,413,701	28,317,474	− 6.8
B&O	40,767,238	42,658,880	− 4.5	113,498,423	103,555,965	77,231,884	68,999,579	36,266,539	34,556,386	+ 4.9
B&M	11,754,467	14,629,870	−19.7	29,996,557	29,534,337	22,477,128	18,391,842	7,519,429	11,142,495	−32.6
CofGa	8,777,740	8,045,310	+ 9.1	15,387,352	14,621,601	8,780,730	8,054,927	6,606,622	6,566,674	+ .6
CofNJ	3,875,982	4,987,412	−22.3	19,070,803	18,388,634	12,768,539	10,904,859	6,302,264	7,483,775	−15.8
C&O	67,940,857	83,699,122	−18.9	131,145,271	134,084,193	88,922,101	83,702,994	42,223,170	50,381,199	−16.2
C&EI	2,663,343	1,661,911	+60.2	9,469,583	6,842,501	7,613,304	5,457,506	1,856,279	1,384,995	+34.0
C&NW	8,295,155	20,640,111	−59.8	46,534,024	55,765,756	40,212,409	37,394,187	6,321,615	18,371,569	−65.6
CB&Q	46,261,222	43,339,619	+ 6.7	84,205,886	83,461,626	42,235,205	45,500,503	41,970,681	37,961,123	+10.5
CGW	7,944,561	6,682,046	+18.8	12,000,341	10,373,771	7,678,034	6,660,274	4,322,307	3,713,497	+16.4
CMStP&P	35,810,732	46,305,636	−22.7	77,724,944	80,889,929	44,826,689	42,036,411	32,898,255	38,853,518	−15.4
CRI&P	24,544,502	34,860,468	−29.6	57,622,891	64,666,422	40,679,423	43,732,673	16,943,468	20,933,749	−19.1
CStPM&O	1,715,419	1,193,112	+43.7	6,442,774	6,091,876	4,488,266	5,051,369	1,954,508	1,040,507	+87.8
D&H	13,197,775	15,723,607	−16.1	26,014,436	26,081,185	8,835,115	6,558,592	17,179,321	19,522,593	−12.1
DL&W	3,716,789	11,206,143	−66.8	23,540,065	27,836,364	18,038,056	14,113,767	5,502,009	13,722,597	−59.9
D&RGW	21,623,226	22,772,269	− 5.0	36,560,646	37,421,471	19,316,273	19,826,560	17,244,373	17,594,911	− 2.0
DM&IR	7,681,339	18,969,903	−59.5	16,403,555	26,859,624	12,110,702	17,949,556	4,292,853	8,910,068	−51.9
EJ&E	16,217,694	16,340,282	− .8	21,133,039	19,317,490	17,500,619	16,753,865	3,632,420	2,563,625	+41.7
Erie	23,627,885	21,303,724	+10.9	49,344,360	43,489,947	33,154,269	28,316,537	16,190,091	15,173,410	+ 6.7
GTW	2,595,482	2,782,849	− 6.7	11,043,315	10,869,106	8,445,896	8,639,902	2,597,419	2,229,204	+16.5
GN	65,105,465	71,850,084	− 9.4	111,104,887	117,101,902	47,617,407	50,908,606	63,487,480	66,193,296	− 4.1
GM&O	19,735,544	20,018,419	− 1.5	40,800,793	39,445,991	23,987,780	23,022,544	16,813,013	16,423,447	+ 2.3
IC	61,696,726	62,121,088	− .7	104,842,922	108,750,829	57,152,378	61,304,444	47,690,544	47,446,385	+ .5
LV	10,395,895	9,878,884	+ 5.2	20,378,855	20,260,683	10,716,381	11,726,461	9,662,474	8,534,222	+13.2
LI	7,947,977	8,225,690	− 3.4	14,981,263	14,967,047	11,770,440	11,086,636	3,210,823	3,880,411	−17.3
L&N	52,200,672	39,314,868	+32.7	93,953,603	79,214,430	34,488,526	28,603,100	59,465,077	50,611,330	+17.5
MStP&SSM	9,250,316	10,025,404	− 7.8	21,854,479	20,253,208	14,631,105	11,442,311	7,223,374	8,810,897	−18.1
M-K-T	8,611,085	13,138,635	−34.5	22,896,189	25,922,891	13,843,325	14,659,298	8,982,864	11,263,593	−20.2
MP	48,105,324	77,025,242	−37.6	88,032,830	113,419,442	58,121,457	47,588,597	29,911,373	65,830,845	−54.6
NYC	80,399,639	94,055,705	−14.5	202,226,384	197,410,812	137,083,891	131,296,701	65,142,493	66,114,111	− 1.5
NYC&StL	29,612,046	36,694,703	−19.3	54,371,785	58,239,557	32,975,875	33,885,029	21,395,910	24,354,528	−12.2
NYNH&H	9,952,590	13,851,420	−28.2	33,609,039	41,680,862	33,928,397	33,280,958	−319,358	8,399,904	*
N&W	38,394,341	62,017,074	−38.1	81,452,744	98,418,001	45,129,551	42,043,427	36,323,193	56,374,574	−35.6
NP	46,199,936	26,781,833	+72.5	90,208,770	68,130,841	42,145,638	43,302,258	48,063,132	24,828,583	+93.5
PRR	120,529,418	143,928,121	−16.3	254,188,199	266,743,432	146,769,077	140,108,188	107,419,122	126,635,244	−15.2

CHANGES IN CASH & CURRENT ASSETS (continued)

	Cash & Temporary Cash Investments Sept. 30		Inc. or Dec.	Total Current Assets		Total Current Liabilities		Excess of Current Assets over Liabilities		Inc. or Dec.
	1955	1956	%	End of Sept. 1956	End of Sept. 1955	End of Sept. 1956	End of Sept. 1965	End of Sept. 1956	End of Sept. 1955	%
P&LE	23,329,690	14,759,088	+58.0	30,615,562	22,617,353	12,483,083	10,769,168	18,132,479	11,848,185	+53.0
Reading	20,305,514	20,834,609	− 2.4	41,269,790	37,512,158	25,675,664	21,033,276	15,594,126	16,478,882	− 5.4
StL-SF	21,867,557	38,961,751	−43.9	42,107,609	58,050,821	25,796,629	25,201,860	16,310,980	32,848,961	−50.4
StLSW	31,050,902	30,537,195	+ 1.6	39,001,749	39,542,108	14,292,518	15,201,136	24,709,231	24,340,972	+ 1.5
SAL	32,814,960	34,739,981	− 5.6	55,248,259	57,112,480	26,207,044	23,729,856	29,041,215	33,382,624	−13.1
Southern	56,725,432	100,249,529	−43.5	88,241,594	129,642,617	67,270,192	72,427,245	20,971,402	57,215,372	−63.4
SPSystem	94,885,130	128,663,692	−26.3	187,309,965	212,854,127	119,674,376	115,751,465	67,635,589	97,102,662	−30.4
T&P	16,244,562	21,006,386	−22.7	29,361,247	32,422,062	11,480,440	13,119,989	17,880,807	19,302,073	− 7.4
UP	132,650,275	127,979,492	+ 3.6	223,372,260	220,726,980	109,878,663	113,159,790	113,493,597	107,567,190	+ 5.5
Wabash	23,827,077	25,567,341	− 6.8	36,003,895	36,165,618	18,915,217	18,790,520	17,088,678	17,375,098	− 1.7

Certain capital and other reserve funds are not included in this tabulation.
• Current liabilities exceeded current assets in 1956.

B REPRESENTATIVE EQUIPMENT ISSUES

Road	Maturity	Amount	Int. Rate %	Issue Sold at Price	Issue Sold at Cost	Purchaser
Atlantic Coast Line, Ser. K	1958-1972	5,155,000	4¼	99.3336	4.41	Salomon Bros. & Hutzler, et al
Baltimore & Ohio, Ser. GG	1957-1971	$4,500,000	3¼	99.3304	3.38	Halsey, Stuart & Co., et al
Ser. GG	1957-1971	3,600,000	3⅜	99.227	3.78	Salomon Bros. & Hutzler, et al
Ser. GG	1957-1971	3,600,000	3⅜	99.426	3.75	Halsey, Stuart & Co., et al
Ser. HH	1958-1972	1,380,000	4¼	99.589	4.31	R. W. Pressprich & Co., et al
Boston & Maine, Ser. 1	1957-1971	7,230,000	4½	99.16	4.70	Halsey, Stuart & Co., et al
Central of Georgia, Ser. B	1956-1971	4,680,000	3¼	99.2807	3.37	Salomon Bros. & Hutzler, et al
Ser. C	1957-1971	840,000	4⅜	99.32	4.75	Halsey, Stuart & Co.
Chesapeake & Ohio	1957-1971	4,800,000	3	99.0837	3.17	Salomon Bros. & Hutzler, et al
	1957-1971	4,800,000	3	99.14	3.16	Salomon Bros. & Hutzler, et al
	1957-1971	4,800,000	3⅜	99.189	3.53	Halsey, Stuart & Co., et al
	1957-1971	8,100,000	3⅜	99.237	3.53	Salomon Bros. & Hutzler, et al
	1957-1971	7,800,000	3⅛	99.0413	4.08	Salomon Bros. & Hutzler, et al
Chicago & North Western	1956-1970	3,900,000	3¾	99.0647	3.94	Halsey Stuart & Co., et al
	1956-1970	3,900,000	3¾	99.619	3.85	Halsey, Stuart & Co., et al
	1957-1971	3,105,000	4⅜	99.34	4.54	Salomon Bros. & Hutzler, et al
	1957-1971	3,375,000	5⅛	99.5433	5.27	Salomon Bros. & Hutzler, et al
Chicago, Burlington & Quincy	1956-1971	7,800,000	3⅛	99.6603	3.18	Salomon Bros. & Hutzler, et al
	1957-1971	3,600,000	3⅞	99.212	4.01	Salomon Bros. & Hutzler, et al
Chicago, Rock Island & Pacific, Ser. Q	1956-1968	2,880,000	3½	99.31	3.51	Halsey, Stuart & Co.
Delaware, Lackawanna & Western, Ser. N	1956-1971	3,990,000	3¾	99.45	3.84	Salomon Bros. & Hutzler, et al
Ser. N	1956-1971	3,510,000	3⅞	99.22	4.01	Halsey, Stuart & Co., et al
Denver & Rio Grande Western, Ser. U	1957-1971	2,820,000	3¼	99.06	3.40	Halsey, Stuart & Co., et al
Erie	1957-1971	6,225,000	3½	99.502	3.74	Halsey, Stuart & Co., et al
	1958-1972	2,805,000	4¼	99.51	4.38	Halsey, Stuart & Co., et al
Great Northern	1956-1971	6,600,000	3⅛	99.337	3.48	Salomon Bros. & Hutzler, et al
Illinois Central, Ser. 42	1956-1971	9,900,000	3	99.585	3.07	Salomon Bros. & Hutzler, et al
Ser. 43	1957-1972	9,300,000	4	99.142	4.15	Salomon Bros. & Hutzler, et al
Louisville & Nashville, Ser. O	1957-1971	3,645,000	3	99.4109	3.11	Halsey, Stuart & Co., et al
Ser. P	1957-1971	7,605,000	3⅛	99.299	4.03	Halsey, Stuart & Co., et al
Minneapolis, St. Paul & Sault Ste. Marie, Ser. C	1957-1971	2,640,000	4½	99.079	4.66	Halsey, Stuart & Co.
Missouri-Kansas-Texas	1957-1971	3,645,000	3⅝	98.584	3.89	Salomon Bros. & Hutzler, et al
Missouri Pacific, Ser. D	1957-1971	2,550,000	3½	99.17	3.54	Salomon Bros. & Hutzler, et al
Ser. E	1957-1971	2,625,000	3½	99.177	3.79	Salomon Bros. & Hutzler, et al
Ser. F	1957-1971	2,625,000	3¾	99.1093	3.93	Salomon Bros. & Hutzler, et al
Ser. F	1957-1971	2,700,000	4½	99.025	4.33	Salomon Bros. & Hutzler, et al
New York Central	1958-1972	8,055,000	4⅝	98.069	5.15	Salomon Bros. & Hutzler, et al
New York, Chicago & St. Louis	1956-1971	3,750,000	3½	99.33	3.48	Halsey, Stuart & Co., et al
New York, New Haven & Hartford	1957-1971	2,250,000	4½	98.523	4.94	Salomon Bros. & Hutzler, et al
	1957-1971	2,715,000	5⅛	98.51	5.46	Halsey, Stuart & Co., et al
Northern Pacific	1957-1971	6,060,000	3⅛	99.3683	3.18	Salomon Bros. & Hutzler, et al
	1957-1971	7,725,000	3½	99.357	3.63	Salomon Bros. & Hutzler, et al
Pennsylvania, Ser. FF	1956-1971	7,560,000	3½	99.317	3.24	Salomon Bros. & Hutzler, et al
Ser. FF	1957-1971	6,873,000	3⅝	98.21	4.06	Halsey, Stuart & Co., et al
Ser. GG	1957-1972	9,300,000	4⅛	98.416	4.40	Salomon Bros. & Hutzler, et al
Pittsburgh & Lake Erie	1957-1971	7,305,000	3½	98.6753	4.13	Salomon Bros. & Hutzler, et al
Reading, Ser. Y	1956-1971	6,600,000	3⅜	99.4915	3.74	Halsey, Stuart & Co., et al
Ser. Y	1957-1971	5,220,000	4	99.2837	4.12	Salomon Bros. & Hutzler, et al
Seaboard Air Line Ser. P	1956-1970	6,555,000	2⅞	98.702	3.10	Salomon Bros. & Hutzler, et al
Ser. Q	1957-1971	4,650,000	3⅛	98.61	3.90	Halsey, Stuart & Co., et al
Southern Pacific, Ser. TT	1957-1971	9,660,000	3½	99.65	3.59	Salomon Bros. & Hutzler, et al
Ser. UU	1957-1971	9,660,000	3½	99.56	3.73	Salomon Bros. & Hutzler, et al
Virginian, Ser. E	1957-1971	3,600,000	3¾	99.75	3.83	Halsey, Stuart & Co., et al
Wabash, Ser. G	1957-1971	8,310,000	3	98.40	3.27	Salomon Bros. & Hutzler, et al
Western Maryland, Ser. S	1957-1971	3,285,000	3⅜	99.559	3.47	Halsey, Stuart & Co., et al

C 1956 REPRESENTATIVE SECURITIES ISSUES

Railroad	Type of Security	Total Amount	Purpose of Issue
Atchison, Topeka & Santa Fe	Common and Preferred Stocks	19,420,760 common shares 9,935,990 preferred shares	To effect 5-for-1 split of common and preferred stocks; 1,000,000 new common shares reserved for issuance to officers and key employees under incentive stock plan.
Baltimore & Ohio	4½% Debentures	$54,710,000	To exchange for like amount of convertible income bonds.
	Common Stock	547,100 sh.	To provide for conversion of above debentures.
Baltimore & Ohio Chicago Terminal	1st Mortgage 4¼% Bonds	$31,500,000	To be exchanged for like amount of first mortgage 4% bonds, Series A.
Bangor & Aroostook	Common Stock	29,761 sh.	To be used, with treasury cash, to redeem outstanding first mortgage bonds.
	First Mortgage 4½% Bonds	$8,000,000	
Chicago & North Western	Common Stock	75,000 sh.	To effect a stock option plan.
Chicago Great Western	Common Stock	9,037 sh.	Stock dividend; 1 new share for each 40 shares held.
Chicago, Rock Island & Pacific	Common Stock	2,921,550 sh.	To effect 2-for-1 split of common stock.

1956 REPRESENTATIVE SECURITIES ISSUES (continued)

Railroad	Type of Security	Total Amount	Purpose of Issue
Chicago South Shore & South Bend	5% Sinking Fund Notes	$1,500,000	To provide funds for constructing a substitute main line in Lake County, Indiana.
Delaware & Hudson	Promissory Note	$2,500,000	To provide part of funds needed to purchase 3.45-mile line from Erie.
	Common Stock	1,761,942 sh.	To effect 3-for-1 stock split.
Des Moines & Central Iowa	Common Stock	20,000 sh.	To provide part of funds for purchase of voting stock of Ft. Dodge, Des Moines & Southern.
Illinois-Missouri Terminal	Promissory Note	$20,015,635	To finance purchase of properties of Illinois Terminal.
	Common Stock	2,000 sh.	To be held by railroads participating in ownership.
Johnstown & Stony Creek	Demand Note	$375,000	To replace balance of like amount from previous note to parent U. S. Steel Corp.
Litchfield & Madison	Common Stock	180,000 sh.	40,000 sh. for exchange on 2-for-1 basis for previous common stock; 140,000 sh. for distribution on 7-for-1 basis as a dividend on previous issue.
Maine Central	5% 1st Mtge. and Collateral Bonds	$3,114,500	To be exchanged for all outstanding stock of European & North American.
	5¼% Promissory Notes	$1,300,000	To redeem prior preference stock.
Missouri Pacific	Various Bonds	$546,745,000	To effect consummation of reorganization plan.
	Class A Voting Stock	$191,755,800	
	Class B Voting Stock	$4,065,700	
New Orleans, Texas & Mexico	Preferred Stock	215,779 sh.	To be issued to parent Missouri Pacific in exchange for certain indebtedness.
New York, Chicago & St. Louis	Common Stock	2,981,000 sh.	To effect 2-for-1 split of common stock.
New York, New Haven & Hartford	Promissory Note	$10,000,000	To finance repairs caused by floods.
	1st and Refunding Bonds	$7,500,000	To pledge as security for above note.
	Promissory Note	$16,000,000	Primarily to refinance earlier loans which provided funds for flood repairs.
Norfolk Southern	Common Stock	19,285 sh.	Stock dividend; one share for each 20 shares held.
Northern Pacific	Common Stock	2,600,000 sh.	To effect 2-for-1 stock split.
Pecos Valley Southern	Common Stock	7,650 sh.	To effect 17-for-1 stock split.
Sacramento Northern	Common Stock	75,000 sh.	To effect reorganization plan.
St. Louis-San Francisco	5% Income Debentures	$61,600,000	To be exchanged for 616,000 shares of Series A 5% preferred stock.
	Common Stock	154,000 sh.	
Seaboard Air Line	Common Stock	4,898,950 sh.	To effect 2-for-1 stock split.
Southern	Common Stock	3,984,600 sh.	To effect 2½-for-1 stock split.
	Preferred Stock	3,000,000	To effect 2½-for-1 stock split.
Southern Pacific	1st Mortgage Bonds	$35,000,000	For capital expenditures.
Texas City Terminal	Installment Note	$750,000	To refinance previous note.
Toledo, Angola & Western	Promissory Note	$80,000	To refinance balance of previous note.
Union Pacific	Capital Stock	$321,834,100	To effect 5-for-1 split of common and preferred stock.
Wellsville, Addison & Galeton	Common Stock	1,000-1,250 sh.	To provide working capital and purchase price of 97 miles of road from B&O.
	4% Bonds	$150,000	
Western Pacific	Common Stock	11,928 sh.	Stock dividend; one share for each 50 shares held.

D NEW SECURITIES ISSUES, 1936-1956

(Amounts in thousands of dollars)

Year	Bonds	Stock	Railroad total	Total all Industries	Railroad as per cent of total
1936	793,618	$3,838	797,456	4,571,670	17.4
1937	344,257	.....	344,257	2,309,524	14.9
1938	54,873	.....	54,873	2,154,664	2.5
1939	185,474	233	185,707	2,164,007	8.6
1940	323,912	.....	323,912	2,677,173	12.1
1941	366,313	.....	366,313	2,666,887	13.7
1942	47,726	.....	47,726	1,062,288	4.5
1943	161,179	.....	161,179	1,169,692	13.8
1944	609,010	350	609,360	3,201,891	19.0
1945	1,453,517	504	1,454,021	6,010,985	24.2
1946	711,119	.....	711,119	6,899,646	10.3
1947	285,680	.....	285,680	6,576,824	4.3
1948	623,348	.....	623,348	7,077,820	8.8
1949	459,982	.....	459,982	6,051,550	7.6
1950	554,100	.....	554,100	6,361,043	8.7
1951	330,021	5,066	335,087	7,741,099	4.3
1952	524,205	1,000	525,205	9,534,162	5.5
1953	302,397	.....	302,397	8,897,996	3.4
1954	478,895	427	479,322	9,516,168	5.0
1955	541,854	5,923	547,777	10,240,155	5.3
1956*	298,236	1,200	299,436	8,741,825	3.4

*10 Months total.
Compiled by Securities and Exchange Commission.

E 1952-1956 SIGNAL CONSTRUCTION

	1956	1955	1954	1953	1952
Automatic block signals	864	754	678	967	1,318
Interlocking construction					
Signals and switches					
At new plants and added in plants rebuilt	1,303	1,433	1,153	1,832	1,372
At automatic plants	269	147	156	151	133
Spring switches					
Spring buffer mechanisms	147	107	140	162	177
Mechanical facing-point locks	41	35	49	84	70
Signals at spring switches	268	183	203	256	317
Centralized traffic control					
Power switch machines	819	305	548	680	597
Lever-controlled signals	1,948	885	1,496	1,845	1,512
Intermediate signals in CTC territory	1,453	483	967	956	853
Classification yards					
Car retarders	69	54	40	30	57
Power switch machines	254	247	165	156	304
Highway crossing protection					
Number of crossings at which new installations were made in year	1,320	1,146	1,362	1,491	1,435
Totals	8,755	5,779	6,967	8,610	8,144

F CENTRALIZED TRAFFIC CONTROL

Railroad and Location	Miles of Road	No. of Power Switches	No. of Lever Controlled Signals	No. of Intermediate Automatic Signals	Manufacturer
AT&SF					
Fresno, Cal.-Mormon	121.9s	36	104	100	Union
Dalton, Jct, Tex.-Saginaw	32.8s	6	20	14	Union
ACL					
Pyne, Ga.-Shocco, Ala.	81.6s	18	58	36	Union
Walthourville, Ga.-Jesup	3.0s	16	26	13	Union
B&LE					
Filer, Pa.-No. Bessemer	31.3s 35.0d	17	43	37	Union
B&M					
Winchester, Mass.	1.0d	5	5	2	GRS
CNR-GTW					
Belsay, Mich.-Lapeer	10.4s	6	18	30	Union
Imlay City, Mich.-Tappan	24.6s				
CPR					
Edmonton, Alta.	2.0s	..	3	..	GRS
C&O					
Ronceverte, W. Va.-Alderson	12.3s	..	..	4	Union
Mt. Morris, Mich.-Grand Blank	14.9s	8	25	6	GRS
CB&Q					
Galesburg, Ill.-Waterman	3.0s	..	2	2	
Guernsey, Wyo.-Wendover	6.5s	..	2	6	
Chicago-LaVergne, Ill.	7.0t	70	107	30	GRS
CMStP&P					
Manilla, Iowa-Bouton	31.0s 36.0d	8	37	60	Union
Bensenville, Ill.-Elgin	18.0d	7	26	20	Union
Marion, Iowa-Indian Creek	2.0d	4	7	2	Union
CNJ					
Nesquehoning Jct., Pa.-White-Haven	20.0s 3.0d	9	18	14	GRS
D&H					
Albany, N. Y.-Maiden Lane	0.4d	8	8	..	GRS
Scranton, Pa.-Minooka Jct.	4.8s	4	6	2	GRS
D&RGW					
Lynn, Utah-Kynue	3.0d	1	13	6	GRS

CENTRALIZED TRAFFIC CONTROL (continued)

Railroad and Location	Miles o Road	No. of Power Switches	No. of Lever Controlled Signals	No. of Intermediate Automatic Signals	Manufacturer
E. Grand Jct., Colo.-W. Grand Jct.	2.0d	2	10	..	GRS
DT&I					
Flat Rock, Mich.-Allen Park	7.7s	..	7	1	Union
DM&IR					
Woll, Minn.-Largo Jct.	2.9s	3	9	2	Union
Erie					
Newburgh Jct., N. Y.-Greycourt	7.4s	1	3	4	GRS
Newburgh Jct.-Moodna Cr.	9.7s	..	3	5	GRS
Akron, Ind.-Pershing	12.9s	4	10	6	Union
GN					
Schley, Minn.-Cass Lake	8.3s	..	3	..	GRS
Willmar, Minn.-Breckenridge	88.2s 22.6d	40	88	121	GRS
Williston, N. D.-Bainville, Mont.	40.1s	23	45	30	GRS
KCS					
Blanchard, La.-Shreveport	6.0s 3.7d	10	22	6	GRS
L&N					
Corbin, Ky.-Loyall	63.8s	21	73	31	Union
Tunnel Hill, Ky.-Bowling Green	72.7s	18	62	40	GRS
MeC					
Pittsfield, Me.-Hermon Center	27.3s	6	22	10	GRS
MP					
Bald Knob, Ark.-Holland	39.0d	14	16	68	GRS
Chester, Ill.-Yards	..	1	2	..	GRS
Gale, Ill.-Yards	...	1	2	..	GR
NYC					
Bay View, N.Y.-Nottingham, Ohio	162.8d	169	225	201	GR
P&LE					
Wylie, Pa.-E. California	21.8s	4	22	6	Union
N&W					
Phoebe, Va.-Appomattox	6.2s	2	5	2	Union
Falls Mills, Va.-Bluestone, W.Va.	4.1d	4	4	10	Union
Clift Yd., W. Va.-Glatto	11.7s	2	7	4	Union
Roderfield, W. Va.	...	4	4	..	Union
White, W. Va.-Matewan	1.3s	3	5	1	Union
Naugatuck, W. Va.	0.5d	2	4	..	Union
Star Yd., Ohio-OS Intrl.	3.6s	4	12	1	Union
"GS" Portsmouth, O.-"KM"	1.4d	20	22	1	Union
NP					
Logan, Mont.-Bozeman	26.0s	9	25	16	GRS
PRR					
Jamesburg, N. J.-Monmouth Jct.	5.2s	..	2	..	Union
York, Pa.-Loucks	1.3s	..	2	..	Union
Colsan, Ohio-Chatfield	10.8s	2	9	..	Union
E. Claire, Ohio-Loveland	15.2s	..	8	..	Union
QNS&L					
Canatiche, Que.-Siding	...	2	6	2	GRS
Ross Bay, Que.-Siding	...	2	6	2	GRS
Cavanagh, Que.-Siding		2	6	2	GRS
Six locations—Power Switch	...	6	12	..	GRS
Reading					
Flat Rock Tunnel	0.4s	2	4	..	GRS
Reading, Pa.-Belt Jct.	2.3d	..	..	4	GRS
Pike St.-Blandon, Pa.	7.3s	1	3	2	GRS
StL-SF					
Blytheville, Ark.-Turrell	46.1s	4	24	20	Union
StLSW					
Tyler, Tex.-Corsicana	74.0s	10	30	34	Union
Southern					
Greenville, S. C.-Armour, Ga.	62.2s 90.4d	72	210	140	GRS
SP					
Thermal, Cal.-Yuma, Ariz.	113.9s 6.1d	45	111	121	Union
Hearne, Tex.-Seger	3.6s	2	7	2	Union
UP					
Granger, Wyo.-Montpelier, Ida.	108.0s 7.0d	48	176	102	Union
Pocatello, Ida.-McCammon	22.0d	9	28	36	Union
Wabash					
Salisbury, Mo.-Carrollton	44.8s	12	41	24	Union
Bement, Ill.-Lodge	13.1s 1.9d	8	15	10	Union
WM					
No. Branch, Md.-Maryland Jct.	5.4s	..	4	2	Union
Totals	1,329.4s 479.6d 7.0t	819	1,948	1,453	

G AUTOMATIC BLOCK SIGNALING

Railroad and Location	Miles of Road	No. of Signals	Manufacturer
B&M			
Worcester, Mass.-Garden St.	0.6d	2	GRS
Swampscott, Mass.	....	1	GRS
Wedgemere, Mass.-Winchester	1.0d	2	GRS
CNR			
Dorval, Que.	....	1	Union
Capreol, Ont.-Yard	5.0s	5	Union
Sarnia, Ont.-Port Huron	1.3s	..	....
Blue River, B.C.-Kamloops Jct.	137.8s	186	GRS
CPR			
Pointe au Baril, Ont.-Rutter	40.4s	61	Union
Wetaskiwin, Alta.-Edmonton	42.3s	61	GRS
Douglas, Man.-Chater	4.0s	2	GRS

AUTOMATIC BLOCK SIGNALING (continued)

Railroad and Location	Miles of Road	No. of Signals	Manufacturer
Raith, Ont.-Buda	15.2s	5	GRS
Portage La Prairie, Man.	3.6s	2	GRS
Pasqua, Sask.	1.7s	1	GRS
C&O			
Ronceverte, W.Va.-Alderson	12.3s	3	Union
C&NW			
Baraboo, Wis.-Elroy	48.0s	63	GRS
Lewiston, Minn.-Stockton	8.0s	6	GRS
CSS&SB			
System	5.2d	7	Union
DL&W			
E. Lancaster, N.Y.-Cheektowaga	3.9d	4	Union
Fargo, N.Y.-Lancaster	5.9d	6	Union
Scranton, Pa.-Elmhurst	9.3s	5	Union
L&NE			
Lansford, Pa.-Hauto	1.2s	4	GRS
NY Transit Authority			
Flushing Line			
Rawson St.-Maine	4.7d	138	Union
Rockaway Div.			
Liberty Ave.-No. Bridge	2.3d	69	GRS
Bridge-Rockaway Pen.	6.1d	72	Union
Culver Line			
North 18th-Church Ave.	0.2d	2	GRS
NYO&W			
Luzon, N.Y.-Liberty	10.2s	8	Union
N&W			
Matewan, W.Va.	0.9s	2	Union
NP			
Silver Bow, Mont.-Hackney	....	2	GRS
Coon Creek, Minn.	....	2	GRS
ONR			
Bushnell, Ont.-Tomiko	20.0s	22	GRS
PRR			
Chatfield, Ohio-Carrothers	2.9d	4	Union
Southern			
MP R-O.5-6.0	5.5ss	6	GRS
SP&S			
Dallas, Wash.-Avery	14.0s	18	GRS
T&P			
Lucas, La.-Texmo Jct.	112.3s	88	GRS
WM			
Sabillasville, Md.-Thurmont	7.0s	4	Union
Totals	500.0s 32.8d	864	

H 1956 RETARDER INSTALLATIONS

Railroad and Location	Retarders	Rail Feet of Retarder	Power Switches	Classification Tracks	Manufacturer
B&M					
Mechanicsville, N.Y.	2		rebuilt		GRS
C&O					
Newport News, Va.	2	137	10	12	Union
CMSP&P					
St. Paul, Minn.	8	1,149	41	38	Union
CNJ					
Jersey City, N.J.	5	1,047	4	14	Union
GN					
Gavin Yard, N.D.	10	990	48	40	GRS
Nat'l. of Mexico					
Valle de Mexico	19	1,320	47	48	GRS
NYC					
Buffalo, N.Y.	9	973	65	63	GRS
N&W					
Lamberts Point, Va.	7	539	20	18	GRS
Southern					
Hayne, S.C.	4	132	4	..	GRS
SP					
Eugene, Ore.	3	300	15	16	Union
Totals	69	6,587	254		

I INTERLOCKINGS INSTALLED

Railroad and Location	Home Signals	Power Switches	Manufacturer
ACL			
Bradenton, Fla	2	1	Union
B&O			
Butler, Pa.	10	4	Union
Baltimore, Md.	4	2	GRS
CNR			
Parkdale, Ont.	5	2	GRS
Sarnia, Ont.	5	3	GRS
C&O			
Frazier, W.Va.	6	..	Union
Walbridge, Ohio	7	5	Union

INTERLOCKINGS INSTALLED (continued)

Railroad and Location	Home Signals	Power Switches	Manufacturer
CMStP&P			
Rand, Minn.	7	4	Union
Cedar, Minn.	6	4	Union
Garden, Minn.	10	..	Union
CNJ			
Dunnellen, N.J.	9	8	Union
CTA			
Chicago, Lake St.	4	4	Union
DL&W			
MP 132, Pa.	2	..	Union
Elmhurst, Pa.	5	3	Union
Scranton, Pa.	2	..	Union
Erie			
Croxton, N.J.	6	4	Union
Youngstown, Ohio	6	3	Union
GN			
Sioux City, Iowa	5	..	GRS
Minot, N.D.	10	6	GRS
Minot Yard	3	1	GRS
Edmonds, Wash.	6	2	GRS
L&N			
New Orleans, La.	15	7	GRS
Baxter, Ky.	5	2	GRS
Louisville, Ky.	7	5	GRS
Lebanon Jct., Ky.	6	6	GRS
NY Transit Authority			
Howard Beach	28	18	GRS
Rockaway Park	20	14	Union
Hammels Wye	20	8	Union
Ditmas Ave.	16	11	GRS
Liberty Jct.	21	19	GRS
NYNH&H			
New Haven, Conn.	65	38	Union
N&W			
Norton, Va.	3	2	Union
NP			
Pasco, Wash. Yard	8	4	GRS
Pasco, Wash.	20	20	GRS
PRR			
Bucyrus, O. (Benson)	3	1	Union
Bucyrus, O. (Holmes)	3	1	Union
E. Clare	3	1	Union
RF&P			
Potomac Yard, Va.	2	10	Union
Southern			
Sheffield, Ala.	11	4	GRS
Charlotte Jct., N.C.	11	5	GRS
Anniston, Ala.	4	2	GRS
Chattahoochee, Ga.	6	4	GRS
AGS			
Wauhatchie, Tenn.	12	2	GRS
Woodward, Ala.	6	1	GRS
NOT			
New Orleans, La.	2	1	GRS
SP			
Mojave, Cal.	6	8	Union
TRRStL			
St. Louis	34	16	Union
Totals	457	266	

J YARD RADIO INSTALLATIONS

Railroad	No. of Yards with Radio	No. of Loco. Equipped	No. of Fixed Stations	No. of Walkie Talkie Sets
A&S	1	..	2	2
AT&SF	9	22	6	25
ACL	6	..	6	..
CNR	1	3	1	..
CofG	4	2	4	..
C&O	10	64	13	42
CMStP&P	2	3	2	4
CNJ	1	18	1	..
CRI&P	13	7	11	..
D&RGW	2	5	1	..
DT&I	1	..	1	..
DM&IR	1	10	..	2
Erie	3	3*	..	..
GN	2	17	3	..
IC	2	4	1	5
KCS	1	2	..	..
KCT	1	2	..	..
MP	2	14	..	..
NC&StL	1	6	1	..
NYC	6	8	4	9
P&LE	1	22	2	12
N&W	2	15	2	..
NP	4	4	..	3
		1*		
ONR	1	2	1	4
PRR	4	51	4	..
			1‡	..
PRSL	1	..	1	2
QNS&L	1	1	2	..
Reading	2	40	1	..
	..	6*	..	..
StL-SF	5	5	6	18
SAL	3	3	1	..
SP	3	15	3	..
T&NO	2	11	..	..

YARD RADIO INSTALLATIONS (continued)

Railroad	No. of Yards with Radio	No. of Loco. Equipped	No. of Fixed Stations	No. of Walkie Talkie Sets
Union	3	23	3	2
UP	7	16	6	32
Wabash	3	11	4	6
Totals	111	416	101	168

* Autos
‡ Inductive

K YARD COMMUNICATIONS

Railroad	Loudspeaker Systems: No. of Points Equipped	Loudspeaker Systems: No. of Two-way Speakers	Loudspeaker Systems: No. of Paging Speakers	Intercommunication Systems: No. of Systems Installed	Intercommunication Systems: No. of Telephones	Intercommunication Systems: No. of Loud Speakers
A&S	1	3	..	..	..	..
AT&SF	1	60	13	2	..	16
B&O	2	6	9	..	..	..
CofG	1	14	..	..	..	..
C&O	5	186	17	6	12	75
C&EI	1	7	..	..	..	..
C&NW	1	10	10	..	..	..
CB&Q	1	..	13	..	..	..
CMStP&P	3	49	65	1	..	28
CNJ	1	13	23	..	..	..
CRI&P	3	22	46	..	..	..
Clinchfield	..	..	..	1	..	8
DL&W	..	..	..	1	..	8
DT&I	..	..	..	1	..	1
DM&IR	1	..	5	3	12	19
G&F	..	..	..	2	..	8
GN	2	..	11	2	12	8
IC	1	2	4	..	..	..
JTC	..	..	..	1	113	90
KCS	1	72	20	4	15	10
KCT	1	150	6	1	..	40
MP	..	..	..	1	50	..
NYC	1	..	7	1	..	2
NYC&StL	1	2	..	..	..	..
N&W	4	..	46	1	..	12
NP	..	..	..	2	7	12
PRR	3	..	28	1	..	6
QNS&L	..	..	..	2	17	25
Reading	1	14	12	..	..	..
StL-SF	1	..	2	3	..	25
SAL	1	8	11	3	..	110
Southern	..	..	..	2	..	32
AGS	1	..	10	..	..	..
CNO&TP	1	57	..	1	..	4
NO&NE	1	25	20	1	..	2
SP	1	32	4	..	..	..
T&NO	..	..	..	1	11	17
SP&S	..	..	..	1	..	3
TRRStL	2	33	48	..	..	..
T&P	1	15	..	1	6	..
Union	1	1	..	..	..	..
UP	2	73	..	..	..	..
Wabash	1	81	29	..	..	..
Totals	49	935	459	46	255	561

L ROAD TRAIN COMMUNICATIONS

Railroad	Locomotives Equipped	Cabooses, Other Cars	Fixed Stations	Walkie-Talkie Sets
A&S	..	..	1	..
AT&SF	66	43	24	32
A&StAB	2	1‡	..	..
ACL	96	75	..	17
BAR	..	..	1	..
B&LE	..	..	2	8
CofGa	48	..	2	21
C&WC	14	14	..	30
C&O	115	1	3	8
C&EI	19	2	7	11
	..	4‡	..	..
CB&Q	12	..	6	..
CGW	3	15	..	..
CMStP&P	17	100	5	10
	..	2‡	..	..
CRI&P	60	6‡	..	..
CSS&SB	..	3‡	..	..
Clinchfield	39	41	5	86
DL&W	2	20	4	..
D&RGW	12	10	..	..
DT&I	10	1	1	1
DM&IR	4*	..	1*	..
DSS&A	8	..	..	12
Erie	7	..	2	..

ROAD TRAIN COMMUNICATIONS (continued)

Railroad	Locomotives Equipped	Cabooses, Other Cars	Fixed Stations	Walkie-Talkie Sets
GN	107	2	47	..
GB&W	1	2	..	..
GM&O	2	4	5	6
K&IT	..	6♯	2	2
L&N	26	22	..	48
MeC	7	..	7	2
M&StL	10	9	3	20
MP	..	..	8	10
Monon	6	4	1	6
NYC&StL	1	12	..	12
NP	14	18	1	..
ONR	4	..	..	6
PRR	22*	..	16*	..
QSN&L	20	4	5	2
SAL	32	35†	1	35
Soo Line	5	..	..	20
Southern	8	8	5	..

Railroad	Locomotives Equipped	Cabooses, Other Cars	Fixed Stations	Walkie-Talkie Sets
AGS	1	..	..	..
CNO&TP	1	..	1	..
LOP&G	1	1	2	..
NO&NE	4	..	..	..
SGa	1	2	1	..
SP	69	24	4	..
	..	1♯	..	..
T&NO	28	24	1	..
T&P	61	5♯	1	1
TP&W	..	2	..	..
WM	1	..	..	..
WP	..	3♯	..	..
Totals	966	491	175	406

* Inductive
♯ Autos, snow plows, bus, cars, trucks.
† Racks and antennas only.

M COMMUNICATIONS INSTALLATIONS

UNITED STATES AND CANADA (1952-1956)

	1956	1955	1954	1953	1952
Miles of new or rebuilt pole line	7,304	7,334	8,244	7,314	7,101
Miles of new copper line wire	11,838♯	6,690*	29,383	3,902	19,348
Miles of new wire for long-distance voice circuits	8,958+	1,778	4,038	6,569	6,825
Miles of new wire for printing telegraph circuits	4,305	3,554	4,147	10,081	3,010
Carrier channel terminals for long-distance voice circuits	714	.....	.....	.....	.....
Voice carrier repeaters for long-distance voice circuits	152	.....	.....	.....	.....
Carrier channel terminals for printing telegraph circuits	948	.....	.....	.....	.....
Carrier telegraph repeaters for printing telegraph circuits	34	.....	.....	.....	.....
Total mileage of new communications circuits		00,000	000,00	00,000	00,00000
Road train communications					
Locomotives equipped	966	817	768	808	664
Cabooses and other cars (also autos) equipped	491	333	614	500	383
Fixed wayside stations	175	104	138	151	80
Walkie-talkie sets	406	287	312	566	348
	2,038	1,541	1,832	2,025	1,475
Yard radio communications					
Locomotives equipped	416	440	453	424	327
Fixed stations	101	100	105	108	99
Walkie-talkie sets	168	206	251	188	103
	685	746	809	715	529
Yard loudspeaker systems					
Two-way speakers	935	969	909	1,015	1,906
Paging speakers	459	438	596	351	771
	1,394	1,407	1,505	1,366	2,677
Intercommunications systems					
Telephones	255	124	383	596	338
Loudspeakers	561	433	883	604	779
	816	557	1,266	1,200	1,117
Total of communications equipment units	4,933	4,251	5,412	5,306	5,798

* Includes 360 mi Aluminum ♯ Includes 4,086 mi Aluminum + Includes 3,133 mi Aluminum

N GRADE CROSSING PROTECTION

Railroad	Crossings Getting Flashing-Light Signals Only	Crossings Getting Electrically Operated Gates and Flashing-Light Signals
AT&SF	104	25
ACL	31	13
B&O	19	4
B&M	11	4
CNR	71	12
CPR	26	5
C&O	25	3
C&NW	22	16
CB&Q	14	4
CMStP&P	35	3
CNJ	3	11
CRI&P	23	4
D&H	2	17
Erie	1	14
FEC	5	20
GN	17	12
GM&O	12	4
IC	19	4
KCS	15	..
LI	2	9
MP	42	4
NYC	32	11

Railroad	Crossings Getting Flashing-Light Signals Only	Crossings Getting Electrically Operated Gates and Flashing Light Signals
NYC&StL	16	3
NYNH&H	13	2
N&W	17	4
NP	21	3
PE	16	..
PRR	24	18
Reading	7	10
SAL	26	15
StL-SF	15	1
Soo Line	6	4
Southern	22	11
SP	73	23
T&NO	19	1
SP&S	12	..
T&P	18	..
UP	24	3
Totals	984	336

This table lists only those railroads which installed new protection at 10 or more crossings in 1956, but the totals include the crossings at which protection was installed by other roads.

EQUIPMENT ORDERS

Reported in 1956

By ROBERT B. KEANE
Associate Editor

Considerably below 1955 but still high enough to make 1956 a busier year than any since 1951, car orders last year came to about 41,085, the American Railway Car Institute reports. Following the near-record 1955, in which 165,211 orders were placed, 1956 had not been expected, or course, to produce a new ordering peak.

Notable factors which influenced car purchasing programs during the year included the mid-year steel strike, revenue shortages and rising interest rates on borrowed money, seasonal car shortages, and the railroads' own efforts to achieve better car utilization and to cut the bad order ratio.

Locomotives ordered for domestic railroad use last year, according to reports from railroads and builders, totaled 1,273 units. All of these were diesel-electrics except for two electrics. Orders placed in Canada by Canadian roads came to 197 units, including two hydraulics.

Immediately below is a comparison, by type, of freight and passenger cars ordered and delivered in 1955 and through the full 12 months of 1956, as reported to the ARCI. The lists of car and locomotive orders placed by railroads in 1956 which follow the tables below were compiled from reports from railroads, car builders, private car lines and contract builders.

Passenger-Train Cars Ordered for Domestic Use—by Type

	Coach	Coach Comb.	Bag. & Exp.	Exp. Refr.	Sleeping	Club, etc.	Dining	Postal & Comb.	MU	Self-Prop.	Other	Total
1956	37	0	102	35	0	0	1	41	0	51	2	269
1955	173	2	85	700	39	13	8	0	40	16	2	1,078

Passenger-Train Cars Delivered for Domestic Use—by Type

	Coach	Coach Comb.	Bag. & Exp.	Exp. Refr.	Sleeping	Club, etc.	Dining	Postal & Comb.	MU	Self-Prop.	Other	Total
1956	150	3	85	0	56	13	9	0	32	47	1	396
1955	150	1	25	500	25	15	14	0	86	65	5	886

Freight-Train Cars Ordered for Domestic Use—by Type

	Box	Flat	Stock	Gondola	Hopper	Tank	Refrig.	Caboose	Other	Total
1956*	4,338	2,218	0	4,709	18,615	6,460	2,345	11	2,389	41,085
1955	72,938	5,942	400	13,800	54,990	10,148	4,608	448	1,937	165,211

Freight-Train Cars Delivered for Domestic Use—by Type

	Box	Flat	Stock	Gondola	Hopper	Tank	Refrig.	Caboose	Other	Total
1956	29,925	2,847	300	4,781	18,806	6,124	2,420	200	1,177	66,580
1955	19,206	1,537	100	2,347	7,750	3,929	1,837	231	608	37,545

*Subject to revision; company shop figures estimated for December. Source: American Railway Car Institute.

0 1956 FREIGHT CAR ORDERS

Apalachicola Northern	50	Wood Rack	.....	..	..	Steel Frame	.....	1956	Dec. '56	Thrall Car
Atchison, Topeka & Santa Fe	50	Flat	100,000	53	6	Steel	.....	August	4th qtr. '57	Company Shops
	500	Cov. Hopper	a.....	..	..	Steel	.....	August	June '57	Pullman-Standard
	25	Ore	190,000	..	..	Steel	.....	September	Oct. '57	Company Shops
	25	Mech. Refrig.	100,000	50	..	Steel	.....	September	July '57	Company Shops
	150	Ins. Box	100,000	50	6	Steel	.....	October	Dec. '57	Pullman-Standard

FREIGHT CAR ORDERS (continued)

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Construction	Weight	Date Ordered	Date of Delivery	Builder
	750	Box	100,000	50	6	Steel	.....	October	May '57	Pullman-Standard
	200	Box	100,000	50	6	Steel	.....	October	July '57	Pullman-Standard
	50	Mech. Refrig.	100,000	50	..	Steel	.....	November	1st hlf. '58	Company Shops
	400	Flat	100,000	53	6	Steel	.....	November	1st qtr. '58	Company Shops
	200	Box	100,000	50	6	Steel	.....	December	1st hlf. '58	Pullman-Standard
	750	Gondola	140,000	52	6	Steel	.....	December	1st hlf. '58	GATC
	200	Hopper	140,000	40	8	Steel	.....	December	1st hlf. '58	GATC
	400	Cov. Hopper	.....	..	..	Steel	.....	December	1st hlf. '58	ACF Industries
	25	Air Dump	100,000	..	..	Steel	.....	December	1st hlf. '58	Magor
Atlantic Coast Line	200	Phosphate	140,000	35	9		50,000	April	May '57	Greenville Steel
	800	Cement-Phosphate	140,000	29	3	Steel	52,500	April	Apr. '57	A. C. F. Industries
	800	Pulpwood	140,000	44	11	Steel	57,000	April	Jan. '57	A. C. F. Industries
	2	Flat	252,000	57	9	Steel	126,000	May	Mar. '57	Company Shops
	15	Air Dump	30 Cu Yd	31	10	Steel	57,500	April	Feb. '57	Magor Car
	1	Flat	140,000	53	6	Steel	63,000	August	Jan. '57	Company Shops
Baltimore & Ohio.....	800	Box	100,000	50	6	Steel	54,500	January	1957	Company Shops
	200	Cov. Hopper	140,000	29	3	Steel	51,000	February	Jan. '57	Pullman-Standard
	5	Cov. Hopper	140,000	29	6	Steel	57,800	August	Aug. '56	GATC
	12	Caboose	80,000	23	4	Steel	54,000	September	1957	Company Shops
Butte, Anaconda & Pacific.	200	Ore	150,000	30	5	Steel	51,000	August	June '57	Pullman-Standard
Central of Georgia.....	50	Cov. Hopper	140,000	48	4	Steel Frame	62,000	October	Aug. '57	Pullman-Standard
	200	Cov. Hopper	140,000	35	6	Steel Frame	51,000	October	Aug. '57	Pullman-Standard
	5	Gondola	140,000	65	6	Steel Frame	55,000	June	Jan. '57	Greenville Steel
Central Vermont	1	Snow Plow	50,000	44	8	Steel	85,200	May	Dec. '56	Russel
Chesapeake & Ohio.....	2,000	Hopper	140,000	40	8	Steel	51,000	September	June '57	A. C. F. Industries
	500	Box	100,000	50	6	Steel	52,300	March	Apr. '56	Pullman-Standard
Bangor & Aroostook.....	65	Pulpwood	100,000	44	..	Steel	55,400	July	May '56	Magor Car
	115	Pulpwood	100,000	44	..	Steel	45,400	July '55	Sept. '56	Magor Car
Chicago & North Western .	12	Box	100,000	40	6	Steel	45,900	June	Nov. '56	Pullman Standard
Chicago, Burlington & Quincy.....	2	Cov. Hopper	140,000	39	6	Steel	.....	April	June	GATC
	47	Cov. Hopper	140,000	29	3	Steel	140,000	October	Feb. '57	Company Shops
	2	Cov. Hopper	140,000	29	6	Steel	140,000	February	Feb. '57	Company Shops
Chicago Great Western ..	10	Cov. Hopper	140,000	39	6	Steel	.....	June	.....	GATC
Chicago, Milwaukee, St. Paul & Pacific	50	Cov. Hopper	140,000	39	6	Steel	.....	December	.....	GATC
	100	Cov. Hopper	140,000	41	1	Steel	.....	July	Feb. '57	Pullman-Standard
Chicago, Rock Island & Pacific.....	600	Hopper	140,000	42	10	Steel	54,100	March	May '57	Pullman Standard
	200	Gondola	140,000	52	6	Steel	54,300	March	May '57	Pullman-Standard
	50	Adapto	.....	35	..	Steel	27,100	January	.....	ACF Industries
Chicago, St. Paul, Minneapolis & Omaha..	3	Box	100,000	40	6	Steel	45,900	June	Nov. '56	Pullman-Standard
Chicago, West Pullman & Southern.....	....	Flat	40,000	15	..	Steel	23,200	.....	June '56	Company Shops
Clinchfield.....	250	Hopper	140,000	42	10	Steel	51,400	May	Feb. '58	Pullman-Standard
Columbus & Greenville...	100	Box	100,000	40	6	Steel	.....	June	Dec. '57	Pullman-Standard
Delaware & Hudson.....	10	Cov. Hopper	140,000	29	3	Steel	50,800	July	Nov. '56	Pullman-Standard
	65	Cov. Hopper	140,000	29	3	Steel	52,000	August	Mar. '57	Greenville Steel
Denver & Rio Grande Western.....	200	Hopper	140,000	40	7	Steel	55,000	Dec. '56	Sept. '57	Bethlehem Steel
	50	Cov. Hopper	140,000	41	..	Steel	62,000	Dec. '56	4th qtr. '57	ACF Industries
Detroit, Toledo & Ironton .	50	Hopper	70,000	52	6	Steel	54,100	September	Aug. '57	Pullman-Standard
	100	Gondola	70,000	52	6	Steel	62,600	September	Sept. '57	Pullman-Standard
Duluth, Missabe & Iron Range.....	500	Ore	140,000	19	11	Steel	44,300	November	Sept. '57	ACF Industries
Erie.....	300	Gondola	140,000	52	6	Steel	60,500	July	Aug. '57	Greenville Steel
	50	Flat	100,000	79	6	Steel	47,700	November	Dec. '56	Pullman-Standard
Florida East Coast.....	200	Gondola	140,000	41	6	Steel	.....	February	1st qtr. '57	Magor
Genesee & Wyoming	1	Caboose	.....	30	..	Steel	51,000	June	December	International
Grand Trunk Western	100	Cov. Hopper	140,000	47	..	Steel	61,100	February	Nov. '56	Pullman-Standard
	100	Flat	150,000	..	..	Steel	.....	June	May '57	Magor
	400	Box	100,000	..	..	Steel	.....	May	1st qtr. '57	ACF Industries
	10	Caboose	.....	..	..	Steel	.....	June	4th qtr. '57	International
Great Northern.....	200	Gondola	140,000	52	6	Steel	52,000	January	July '57	Pullman-Standard
	300	Triple Hopper	140,000	42	10	Steel	54,100	January	Nov. '57	Pullman-Standard
	500	Box	100,000	40	6	Steel	50,000	December	Dec. '57	Company Shops
	250	Box	100,000	50	6	Steel	56,000	December	Dec. '57	Company Shops
	25	Air Dump	100,000	35	..	Steel	65,000	June	Oct. '57	B-L-H
	25	Cov.Hopper	100,000	38	6	Steel	54,000	June	Oct. '57	GATC
	30	Caboose	.....	32	..	Steel	53,000	October	Dec. '57	Company Shops
	25	Tank	140,000	..	..	Steel	64,300	November	.....	ACF Industries
Gulf, Mobile & Ohio	250	Box	100,000	50	6	Steel	.....	September	1st qtr. '58	Pullman-Standard
	100	Cov. Hopper	140,000	41	1	Steel	62,500	September	2nd qtr. '57	Greenville Steel
	250	Woodrack	100,000	38	3	Steel	42,400	June	Jan. '57	Company Shops
Illinois Central.....	200	Cov. Hopper	140,000	41	1	Steel	62,000	June	July '57	Pullman-Standard
	2,000	Box	100,000	40	6	Steel	48,000	July	Nov. '57	Company Shops
	10	Flat	140,000	60	..	Steel	65,800	September	Jan. '57	Company Shops
	100	Flat	100,000	53	6	Steel	55,100	September	Apr. '57	Company Shops
Jersey Central.....	50	Hopper	140,000	29	3	Steel	49,200	August	July '57	ACF Industries
	2	Box	100,000	50	6	Steel	53,100	July	Oct. '56	ACF Industries
Kansas, Oklahoma & Gulf.	5	Box	140,000	50	..	Steel	.....	June	Mar. '57	Pacific C & F
Lake Superior & Ishpeming	200	Ore Hopper	140,000	24	..	Steel	40,000	August	May '57	Bethlehem Steel
Lehigh & New England....	100	Cov. Hopper	100,000	29	3	Steel	52,000	August	May '57	Greenville Steel
	100	Cov. Hopper	100,000	29	3	Steel	50,700	August	May '57	Pullman-Standard
	200	Cov. Hopper	100,000	29	3	Steel	49,200	August	May '57	ACF Industries
	3	Box	100,000	46	6	Steel	45,000	October	Nov. '56	Pullman-Standard
Lehigh Valley.....	10	Cov. Hopper	140,000	29	6	Steel	56,700	July	July '57	GATC
	20	Refrigerator	80,000	40	0	Steel	58,000	September	Feb. '57	North American
	25	Flat	110,000	40	1	Steel	45,000	September	Dec. '56	Company Shops
Louisville & Nashville.....	500	Pulp	140,000	48	..	Steel	59,200	May	Feb. '57	ACF Industries
	100	Cov. Hopper	140,000	47	1	Steel	63,600	April	Dec. '56	Pullman-Standard
	2,000	Hopper	140,000	42	10	Steel	53,900	April	Sept. '57	Pullman-Standard
	100	Box	100,000	50	6	Steel	52,000	November	Aug. '57	Pullman-Standard
Maine Central.....	10	Cov. Hopper	140,000	29	3	Steel	50,700	April	May '57	Pullman-Standard
Minneapolis & St. Louis..	250	Hopper	140,000	42	8	Steel	49,350	June	May '57	ACF Industries
	100	Cov. Hopper	140,000	35	3	Steel	50,700	June	June '57	Pullman-Standard
	30	Box	140,000	50	0	Steel	52,000	July	Mar. '57	Pacific C & F
Minneapolis, St. Paul & Sault Ste. Marie.....	15	Cov. Hopper	140,000	39	6	Steel	.....	June	.....	GATC
	300	Box	100,000	40	6	Steel	.....	1956	1957	Company Shops
	100	Box	100,000	50	6	Steel	.....	1956	1957	Company Shops
	200	Box	100,000	50	6	Steel	.....	1956	1958	Company Shops
Missouri-Illinois.....	200	Box	100,000	40	6	Steel Frame	47,500	April	Nov. '57	MP Shops
	100	Hopper	140,000	..	..	Steel Frame	47,800	December	Dec. '57	MP Shops
Missouri Pacific Lines.....	900	Gondola	140,000	52	6	Steel Frame	53,100	May	June '57	Company Shops
	100	Box	100,000	50	6	Steel Frame	57,300	May	June '57	Company Shops
	800	Box	100,000	40	6	Steel Frame	47,500	May	Oct. '57	Company Shops
	200	Pulpwood	140,000	45	3	Steel Frame	53,000	May	Nov. '57	Company Shops
	100	Cov. Hopper	140,000	39	6	Steel	.....	June	1957	GATC
Monon.....	4	Caboose	.....	30	..	Steel	54,500	January	Dec. '56	Company Shops
Monongahela Connecting	30	Gondola	140,000	40	6	Steel	.....	February	Jan. '57	Warren Car
New York Central.....	250	Cov. Hopper	140,000	..	..	Steel	48,700	November	.....	ACF Industries
	150	Cov. Hopper	140,000	29	3	Steel	.....	November	July '57	Pullman-Standard
	100	Cov. Hopper	140,000	41	1	Steel	.....	November	Aug. '57	Pullman-Standard

FREIGHT CAR ORDERS (continued)

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Construction	Weight	Date Ordered	Date of Delivery	Builder
New York, Chicago & St. Louis	100	Cov. Hopper	140,000	29	3	Steel Frame	52,000	July	May '57	Greenville Steel
	9	Air Slide	140,000	29	6	Steel Frame	56,900	June	July '56	GATC
Norfolk & Western	50	Cov. Hopper	140,000	41	1	Steel	61,900	February	Nov. '56	Pullman-Standard
	50	Cov. Hopper	140,000	29	3	Steel	51,000	May	Dec. '56	Pullman-Standard
	25	Box	100,000	50	6	Steel	68,800	July	Jan. '57	Pullman-Standard
	2,000	Hopper	140,000	36	9	Steel	53,000	November	Nov. '57	Company Shops
	10	Dump	30 Cu Yd	31	7	Steel	63,800	November	Nov. '57	B-L-H
Northern Pacific	14	Air Slide	140,000	29	6	Steel Frame	57,600	January	1st qtr. '56	GATC
	100	Cov. Hopper	140,000	29	3	Steel	50,700	June	2nd qtr. '57	Pullman-Standard
	100	Cov. Hopper	140,000	41	1	Steel	62,000	October	3rd qtr. '57	ACF Industries
	50	Tank	19,000	..	..	Steel	66,700	November	June '57	ACF Industries
Pittsburgh & West Virginia	100	Gondola	140,000	52	6	Steel	.....	June	Oct. '57	Pullman-Standard
Portland Terminal	50	Hopper	140,000	40	8	Steel Frame	52,900	May	Dec. '56	Bethlehem Steel
Reading	100	Cov. Hopper	140,000	29	3	Steel	49,200	July	April '57	ACF Industries
Rutland	50	Box	100,000	40	6	Steel	45,900	July	Apr. '57	Pullman-Standard
	25	Gondola	140,000	52	6	Steel	61,000	July	July '57	Pullman Standard
Sacramento Northern	1	Caboose	.....	31	4	Steel Frame	48,000	March	June. '56	WP Shops
	2	Caboose	.....	34	..	Steel Frame	49,500	March	June. '56	WP Shops
	1	Caboose	.....	34	10	Steel Frame	49,600	March	June. '56	WP Shops
St. Louis-San Francisco	100	Auto	100,000	50	6	Steel	.....	.....	.....	Pullman-Standard
	100	Cov. Hopper	140,000	41	1	Steel	61,500	June	Feb. '57	Pullman-Standard
	80	Box	100,000	50	6	Steel	.....	December	May '57	Pullman-Standard
St. Louis Southwestern	50	Flat	100,000	60	..	Stl. Underfr.	68,980	April	Nov. '56	Company Shops
	50	Flat	100,000	53	6	Stl. Underfr.	.....	January	June '57	Greenville Steel
	200	Gondola	140,000	52	6	Steel	.....	January	May '57	Bethlehem Steel
	700	Box	100,000	40	6	Steel	.....	January	Nov. '57	Pullman-Standard
	50	Pulpwood	140,000	45	..	Steel	.....	November	Aug. '57	Company Shops
Seaboard Air Line	700	Triple Hopper	140,000	40	8	Steel	.....	October	Oct. '57	Pullman-Standard
	200	Gondola	140,000	41	6	Steel	.....	October	July '57	Magor
	700	Gondola	100,000	41	6	Steel	.....	October	June '57	Bethlehem Steel
	300	Wood Rack	140,000	50	..	Steel	.....	October	July '57	Greenville Steel
	500	Cov. Cement	140,000	29	3	Steel	.....	October	Aug. '57	ACF Industries
Southern Pacific	500	Gondola	140,000	52	11	Steel	.....	April	November	GATC
Tennessee Central	10	Cov. Hopper	140,000	29	3	Steel	52,000	October	June '57	Greenville Steel
Texas & Pacific	35	Refrigerator	140,000	50	1	Steel	72,900	January	Sept. '57	Company Shops
	25	Refrigerator	140,000	50	1	Steel	72,900	November	July '58	Company Shops
	65	Refrigerator	100,000	50	6	Steel	55,800	January	Aug. '57	Company Shops
	75	Box	100,000	50	6	Steel	55,800	November	July '58	Company Shops
	100	Gondola	140,000	52	6	Steel	51,200	January	Nov. '57	Company Shops
	100	Gondola	140,000	52	6	Steel	51,200	November	Aug. '58	Company Shops
	30	Cov. Hopper	140,000	40	2	Steel	63,000	January	Dec. '57	Company Shops
	30	Cov. Hopper	140,000	39	10	Steel	57,100	November	Aug. '58	Company Shops
Texas Mexican	25	Box	100,000	40	6	Steel	46,800	January	3rd qtr. '57	Pullman-Standard
Virginian	500	Hopper	140,000	40	..	Steel	54,700	April	Apr. '57	Company Shops
	1,000	Hopper	140,000	40	..	Steel	54,700	June	Dec. '57	Company Shops
	35	Pulpwood	110,000	40	..	Steel	.....	April	May '57	Company Shops
	25	Caboose	60,000	24	2	Steel	53,600	April	June '57	Company Shops
	2	Flat	110,000	48	6	Steel	58,100	January	Aug. '56	Company Shops
	500	Hopper	140,000	40	..	Steel	54,700	December	1957-1958	Company Shops
Western Maryland	100	Cov. Hopper	140,000	34	3	Steel	53,000	October	June '57	Greenville Steel
	300	Hopper	140,000	40	8	Steel	54,600	October	July '57	Bethlehem Steel
White Pass & Yukon	7	Flat	60,000	38	..	Steel Frame	19,000	October	Feb. '57	Company Shops
	10	Flat	55,000	30	..	Steel Frame	17,000	October	Feb. '57	Company Shops

FREIGHT CAR ORDERS—Canada

Canadian National	1,000	Box	100,000	40	6	Steel	44,000	February	Feb. '57	Canadian C & F
	1,000	Auto	100,000	40	6	Steel	45,300	July	Aug. '57	Canadian C & F
	1,000	Box	100,000	40	6	Steel	44,000	February	Mar. '57	Eastern
	130	Air Dump	100,000	34	8	Steel	63,000	April	Mar. '57	Eastern
	450	Hopper	140,000	40	8	Steel	52,200	April	July '57	Eastern
	150	Box	60,000	35	11	Steel Frame	32,000	May	Dec. '56	Eastern
	200	Hopper	140,000	36	..	Steel	53,600	April	Jan. '57	Marine Industries
	150	Flat	60,000	40	9	Steel	27,000	April	Mar. '57	Marine Industries
	1,000	Box	100,000	40	6	Steel	44,000	February	Mar. '57	National Steel
	150	Hopper	140,000	40	8	Steel	48,100	April	July '57	National Steel
	200	Refrigerator	100,000	40	..	Steel	64,000	April	May '57	National Steel
	200	Gondola	140,000	55	..	Steel	52,800	April	Apr. '57	National Steel
Canadian Pacific	300	Box	100,000	40	6	Steel	44,200	February	Dec. '56	National Steel
	400	Box	100,000	40	6	Steel	44,300	February	Dec. '56	Canadian C & F
	500	Gondola	156,600	56	6	Steel	53,400	July	May '57	Eastern
	100	Ore	159,000	25	11	Steel	51,000	July	Sept. '57	Eastern
	100	Flat	154,000	52	6	Steel	56,000	July	Mar. '57	Eastern
	1,000	Box	100,000	40	6	Steel	43,900	July	April	National Steel
	500	Hopper	140,000	40	8	Steel	60,000	July	July '57	National Steel
	50	Gondola	140,000	52	6	Steel	60,000	July	July '57	National Steel
	600	Auto	100,000	40	6	Steel	.....	July	Aug. '57	Canadian C & F
	1,000	Box	100,000	40	6	Steel	.....	July	Oct. '57	Canadian C & F
Pacific Great Eastern	500	Box	100,000	40	6	Steel-Alum.	43,000	August	1st hlf. '58	National Steel
	50	Gondola	140,000	52	6	Steel	52,800	January	Nov. '56	National Steel
	150	Flat	140,000	52	6	Steel	51,300	January	Nov. '56	National Steel
	30	Ballast	140,000	40	8	Steel	51,600	January	Nov. '56	Eastern
	30	Hopper	158,400	40	8	Steel	51,600	January	November	Eastern
Quebec North Shore & Labrador	2	Caboose	.....	30	..	Steel	51,000	March	June	International
	25	Gondola	156,000	52	6	Steel	54,000	January	October	Eastern
	25	Flat	140,000	52	6	Stl. Underfr.	53,100	February	November	National Steel
Roberval & Saguenay	20	Hopper	170,000	35	..	Aluminum	32,000	October	Apr. '57	Canadian C & F
Toronto, Hamilton & Buffalo	150	Gondola	140,000	52	..	Steel	51,000	1956	1956-1957	National Steel
	50	Hopper	140,000	36	.	Steel	52,500	December	Oct. '57	National Steel

FREIGHT CAR ORDERS—Latin America

Ferrocarril del Pacifico	460	Box	100,000	40	6	Steel	.....	May	1957	Constructora Nacional
	250	Box	100,000	40	6	Steel	.....	November	1st hlf. '57	Constructora Nacional
International Central America	1	Flat	110,800	40	..	Steel	40,000	September	Dec. '56	Company Shops
National of Mexico	790	Box	100,000	40	10	Steel	46,700	March	1956	Constructora Nacional

FREIGHT CAR ORDERS—Private Car Lines

American Refrigerator Transit	300	Refrigerator	80,000	40	..	Steel	60,000	August	Aug. '57	Pacific C & F
Canadian General Transit	29	Tank	140,000	40	1	Steel	85,500	January	Mid-'57	Canadian C & F
	2	Tank	80,000	37	1	Steel	41,300	January	Aug. '57	Canadian C & F
	1	Tank	80,000	37	..	Steel	38,100	January	Aug. '57	Canadian C & F

FREIGHT CAR ORDERS (continued)

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Construction	Weight	Date Ordered	Date of Delivery	Builder
	21	Tank	140,000	37	9	Steel	60,400	1956	1956-1957	Canadian C & F
	52	Tank	100,000	40	4	Steel	64,500	February	Mid-'57	Canadian C & F
	32	Tank	100,000	40	5	Steel	51,100	February	1st qtr. '57	Canadian C & F
	5	Tank	140,000	37	10	Steel	58,900	Feb.-June	1st hlf. '57	Canadian C & F
	10	Tank	80,000	37	8	Steel	43,400	April	1st qtr. '57	Canadian C & F
	12	Tank	100,000	39	1	Steel	46,800	April	4th qtr. '57	Canadian C & F
Fruit Growers' Express	400	Refrigerator	100,000	33	3	Steel	60,000	January	1st qtr. '57	Pacific C & F
	400	Refrigerator	100,000	40	..	Steel	56,000	January	1st qtr. '57	Company Shops
	100	Refrigerator	128,000	44	6	Steel	81,300	January	2nd qtr. '57	Company Shops
North American Car	10	Tank	80,000	..	..	Steel	.....	April	Apr. '57	Shippers Car Lines
	90	Tank	100,000	..	..	Steel	.....	March	2nd qtr. '57	Shippers Car Lines
	2	Tank	140,000	..	.	Steel	.....	September	2nd qtr. '57	Shippers Car Lines
	20	Tank	100,000	..	..	Steel	.....	October	1st qtr. '57	Company Shops
	250	Cov. Hopper	140,000	29	3	Steel	51,000	Jan.-July	1957	Pullman-Standard
	76	Cov. Hopper	140,000	29	3	Steel	52,000	July	Apr. '57	Greenville Steel
Packers Car Line	400	Refrigerator	80,000	40	..	Steel Frame	63,000	June	Aug. '57	Pacific C & F
Shippers' Car Line	200	Tank	.....	..	..	Steel	.....	1956	1956-1957	ACF Industries
SHPX Third Corp.	230	Cov. Hopper	140,000	29	3	Steel	49,000	Aug.-Oct.	.....	ACF Industries
	470	Tank	.....	..	..	Steel	.....	1956	1956-1957	ACF Industries
Trailer Train	400	Adapto	70,000	35	..	Steel	29,000	January	.....	ACF Industries
Union Tank Car	68	Tank	100,000	..	..	Steel	53,000	March	1956-1957	Company Shops
	48	Tank	140,000	..	..	Steel	59,000	March	1956-1957	Company Shops
	2	Tank	100,000	..	..	Steel	46,500	April	1956	Company Shops
	112	Tank	100,000	..	..	Steel	70,000	March	1957	Company Shops
	111	Tank	140,000	..	..	Steel	88,000	October	1957	Company Shops
	67	Tank	100,000	..	..	Steel	47,000	April	1956-1957	Company Shops
	121	Tank	100,000	..	..	Steel	51,000	March	1956-1957	Company Shops
Western Fruit Express	100	Refrigerator	140,000	50	..	Steel	69,100	June	2nd qtr. '57	Pacific C & F
	50	Refrigerator	128,000	44	6	Steel	81,300	May	2nd qtr. '57	Company Shops
	50	Refrigerator	101,000	34	3	Steel	68,000	May	2nd qtr. '57	Company Shops
Wilson Car Lines	400	Refrigerator	80,000	..	..	Steel	.....	June	Mar. '57	Pacific C & F

FREIGHT CAR ORDERS—Export

Canadian General Transit	15	Tank	100,000	40	4	Steel	64,500	February	4th qtr. '56	GATC
	10	Tank	100,000	40	1	Steel	50,100	September	3rd qtr. '57	GATC
Canadian National	100	Hopper	140,000	41	1	Steel	62,000	January	Dec. '56	Pullman-Standard
	400	Auto	100,000	50	6	Steel	57,000	April	Mar. '57	ACF Industries
	100	Flat	140,000	56	10	Steel	56,500	May	May '57	Magor
	10	Caboose	.....	21	11	Steel	.....	May	2nd hlf. '57	International
Canadian Pacific	1	Crane	260,000	28	..	Steel	172,000	March	Apr. '56	Brownhoist
National of Mexico	20	Air Dump	100,000	30	8	Steel	55,200	March	June '56	Magor

P 1956 LOCOMOTIVE ORDERS

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date Ordered	Delivery Date	Builder
Akron, Canton & Youngstown	1	B-B	Freight	Diesel-Elec.	245,000	1,600	December	May '57	Fairbanks-Morse
Atchison, Topeka & Santa Fe	16	B-B	Switching	Diesel-Elec.	.....	1,700	October	May '57	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	.....	1,200	October	Apr. '57	Fairbanks, Morse
Baltimore & Ohio	64	B-B	Rd.-Sw.	Diesel-Elec.	247,500	1,750	July	September	Electro-Motive
	13	B-B	Rd.-Sw.	Diesel-Elec.	253,100	1,750	July	September	Electro-Motive
	22	B-B	Switching	Diesel-Elec.	230,000	1,000	March	July	Alco Products
Belt of Chicago	2	B-B	Switching	Diesel-Elec.	246,190	1,750	April	June-Oct.	Electro-Motive
Butte, Anaconda & Pacific	4	B-B	Switching	Diesel-Elec.	256,000	1,750	May-Oct.	Mar. '57	Electro-Motive
	2	B-B	Freight	Electric	250,000	2,480	May	June '57	General Electric
Central of Georgia	5	B-B	Freight	Diesel-Elec.	248,000	1,750	October	Apr. '57	Electro-Motive
Central Vermont	11	B-B	Freight	Diesel-Elec.	248,000	1,750	April	Apr. '57	Electro-Motive
	5	B-B	Passenger	Diesel-Elec.	254,000	1,750	April	Mar. '57	Electro-Motive
Chesapeake & Ohio	20	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	February	November	Electro-Motive
	50	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	April	November	Electro-Motive
	30	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	May	June	Electro-Motive
Chicago & Eastern Illinois	2	B-B	Freight	Diesel-Elec.	245,600	1,750	October	1957	Electro-Motive
Chicago & North Western	6	C-C	Rd.-Sw.	Diesel-Elec.	298,600	1,600	February	June	Fairbanks, Morse
Chicago, Rock Island & Pacific	10	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	November	May '57	Electro-Motive
Clinchfield	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,750	March	December	Electro-Motive
Colorado & Southern	11	C-C	General	Diesel-Elec.	325,683	1,750	January	Jan. '57	Electro-Motive
Delaware, Lackawanna & Western	2	C-C	Freight	Diesel-Elec.	375,000	....	April	November	Fairbanks, Morse
Denver & Rio Grande Western	10	C-C	Rd.-Sw.	Diesel-Elec.	365,000	1,750	October	July '57	Electro-Motive
Detroit, Toledo & Ironton	3	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	September	Feb. '57	Electro-Motive
Duluth, Missabe & Iron Range	20	C-C	Rd.-Sw.	Diesel-Elec.	387,000	1,750	July	Mar. '57	Electro-Motive
Elgin, Joliet & Eastern	3	C-C	Rd.-Sw.	Diesel-Elec.	295,000	1,750	July	Mar. '57	Electro-Motive
Fernwood, Columbia & Gulf	1	B-B	Switching	Diesel-Elec.	130,000	900	November	Apr. '57	Electro-Motive
Florida East Coast	10	B-B	General	Diesel-Elec.	.....	1,750	September	Feb. '57	Electro-Motive
Grand Trunk Western	8	B-B	Freight	Diesel-Elec.	.....	1,750	May	Mar. '57	Electro-Motive
	16	B-B	Passenger	Diesel-Elec.	.....	1,750	May	Jan. '57	Electro-Motive
	2	B-B	Freight	Diesel-Elec.	.....	1,200	May	Apr. '57	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	229,810	900	May	November	Electro-Motive
Great Northern	6	C-C	Rd.-Sw.	Diesel-Elec.	345,000	1,750	July	Jan. '57	Electro-Motive
	11	B-B	Rd.-Sw.	Diesel-Elec.	252,000	1,750	July	Apr. '57	Electro-Motive
	12	B-B	Rd.-Sw.	Diesel-Elec.	249,000	1,750	July	Apr. '57	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	240,000	1,200	July	Apr. '57	Electro-Motive
Green Bay & Western	1	B-B	Switching	Diesel-Elec.	245,600	1,800	August	August	Alco Products
Illinois Central	70	B-B	Switching	Diesel-Elec.	240,000	1,750	July	Jan. '57	Electro-Motive
	4	C-C	Passenger	Diesel-Elec.	332,000	2,400	April	Jan. '57	Electro-Motive
Kansas, Oklahoma & Gulf	1	B-B	Rd.-Sw.	Diesel-Elec.	244,000	1,750	June	June '57	Electro-Motive
Lake Superior & Ishpeming	1	B-B	Rd.-Sw.	Diesel-Elec.	325,000	1,800	February	June	Alco Products
Lake Superior Terminal & Transfer	1	B-B	Switching	Diesel-Elec.	.....	1,200	1956	June '57	Electro-Motive
Louisville & Nashville	14	B-B	Freight	Diesel-Elec.	240,000	1,600	February	June	Alco Products
	2	B-B	Freight	Diesel-Elec.	240,000	1,600	February	June	Alco Products
	12	B-B	Frt.-Sw.	Diesel-Elec.	258,500	1,600	February	March	Alco Products
	12	B-B	Pass.-Frt.	Diesel-Elec.	240,000	1,750	February	Mar. '57	Electro-Motive
	8	B-B	Freight	Diesel-Elec.	240,000	1,750	February	Mar. '57	Electro-Motive
	4	B-B	Freight	Diesel-Elec.	240,000	1,750	February	Mar. '57	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	118,000	1,200	February	Mar. '57	Electro-Motive
Macon, Dublin & Savannah	1	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	January	February	Alco Products
Maine Central	1	B-B	Rd.-Sw.	Diesel-Elec.	246,400	1,800	May	June	Alco Products
Manitou & Pikes Peak	1	B-B	Passenger	Diesel-Elec.	50,000	600	January	December	Company Shops
Minneapolis, St. Paul & Sault Ste. Marie	6	B-B	Freight	Diesel-Elec.	.....	1,750	1956	1957	Electro-Motive
New York Central	30	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,750	April	December	Electro-Motive
	14	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,750	September	May '57	G. M. Diesel
	2	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	September	May '57	G. M. Diesel

LOCOMOTIVE ORDERS (continued)

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date Ordered	Delivery Date	Builder
New York, Chicago & St. Louis	20	C-C	Rd.-Sw.	Diesel-Elec.	371,000	1,750	September	Apr. '57	Electro-Motive
	9	C-C	Rd.-Sw.	Diesel-Elec.	371,000	1,800	September	Mar. '57	Alco Products
	7	B-B	Switching	Diesel-Elec.	246,000	1,200	September	Mar. '57	Fairbanks, Morse
New York, New Haven & Hartford	30	....	Rd.-Sw.	Diesel-Elec.	274,800	1,750	January	1957	Electro-Motive
	15	B-B	Rd.-Sw.	Diesel-Elec.	256,156	1,600	February	August	Fairbanks, Morse
	30	....	Rd.-Sw.	Diesel-Elec.	236,000	1,750	February	August	Electro-Motive
	15	....	Rd.-Sw.	Diesel-Elec.	240,000	1,800	February	June	Alco Products
Norfolk & Western	33	B-B	Freight	Diesel-Elec.	247,000	1,750	January	December	Electro-Motive
	17	B-B	Freight	Diesel-Elec.	248,450	1,800	January	March	Alco Products
	2	B-B	Freight	Diesel-Elec.	247,000	1,750	May	May '57	Electro-Motive
	30	B-B	Freight	Diesel-Elec.	247,000	1,750	September	May '57	Electro-Motive
	20	B-B	Freight	Diesel-Elec.	248,450	1,800	December	Mar. '57	Alco Products
	15	B-B	Freight	Diesel-Elec.	247,000	1,750	December	May '57	Electro-Motive
Northern Pacific	5	B-B	Switching	Diesel-Elec.	246,500	1,200	April	Feb. '57	Electro-Motive
	12	B-B	Switching	Diesel-Elec.	247,000	1,200	April	Aug. '57	Electro-Motive
	20	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,750	April	Feb. '57	Electro-Motive
	12	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,750	April	Mar. '57	Electro-Motive
	28	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,750	April	Aug. '57	Electro-Motive
	3	B-B	Passenger	Diesel-Elec.	249,000	1,750	April	December	Electro-Motive
Pennsylvania	9	B-B	Switching	Diesel-Elec.	.....	1,800	February	August	Alco Products
	6	B-B	Switching	Diesel-Elec.	.....	2,400	February	August	Alco Products
	9	B-B	Switching	Diesel-Elec.	375,000	2,400	February	September	Fairbanks, Morse
	55	B-B	General	Diesel-Elec.	.....	1,750	March	November	Electro-Motive
	10	B-B	General	Diesel-Elec.	.....	1,800	November	Mar. '57	Alco Products
	40	B-B	General	Diesel-Elec.	.....	1,750	November	June '57	Electro-Motive
Pittsburgh & West Virginia	4	B-B	Freight	Diesel-Elec'	246,000	1,600	April	December	Fairbanks, Morse
Portland Terminal	1	B-B	Rd.-Sw.	Diesel-Elec.	246,400	1,800	May	June	Alco Products
Reading	2	C-C	Rd.-Sw.	Diesel-Elec.	387,000	2,400	April	December	Fairbanks, Morse
River Terminal	9	B-B	Switching	Diesel-Elec.	243,000	900	January	January	Electro-Motive
Sacramento Northern	1	B-B	Switching	Diesel-Elec.	139,660	720	June	July	General Electric
St. Louis-San Francisco	8	B-B	Freight	Diesel-Elec.	237,000	1,750	October	July '57	Electro-Motive
Seaboard Air Line	25	B-B	Freight	Diesel-Elec.	240,000	1,750	June	November	Electro-Motive
Southern	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,750	January	October	Electro-Motive
Southern Pacific	10	B-B	Switching	Diesel-Elec.	249,000	1,200	February	November	Fairbanks, Morse
	20	B-B	Switching	Diesel-Elec.	223,000	900	February	September	Alco Products
	18	B-B	Switching	Diesel-Elec.	223,000	900	May	December	Alco Products
	10	B-B	Switching	Diesel-Elec.	249,000	1,200	May	Feb. '57	Fairbanks, Morse
	80	B-B	Freight	Diesel-Elec.	250,000	1,750	May	Apr. '57	Electro-Motive
	7	B-B	Freight	Diesel-Elec.	234,000	1,800	May	November	Alco Products
	6	B-B	Switching	Diesel-Elec.	241,000	1,200	May	Mar. '57	Electro-Motive
	3	B-B	Freight	Diesel-Elec.	234,000	1,800	May	May '57	Alco Products
Tennessee Central	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	March	May	Alco Products
Texas & Pacific	6	B-B	Switching	Diesel-Elec.	246,000	1,750	August	Mar. '57	Electro-Motive
Texas Southeastern	1	B-B	Rd.-Sw.	Diesel-Elec.	140,000	720	January	June	General Electric
Virginian	8	B-B	Rd.-Sw.	Diesel-Elec.	262,200	1,600	February	December	Fairbanks, Morse
	6	B-B	Rd.-Sw.	Diesel-Elec.	394,500	2,400	December	May '57	Fairbanks, Morse
Wabash	1	B-B	Switching	Diesel-Elec.	248,000	1,200	October	Jan. '57	Electro-Motive
Western Maryland	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,750	October	May '57	Electro-Motive
White Pass & Yukon	3	C-C	General	Diesel-Elec.	162,000	800	February	Jan. '57	General Electric

LOCOMOTIVE ORDERS—Canada

Canadian National	37	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,750	April	November	G. M. Diesel
	6	B-B	Rd.-Sw.	Diesel-Elec.	230,000	1,750	April	November	G. M. Diesel
	21	B-B	Rd.-Sw.	Diesel-Elec.	224,000	1,200	April	November	G. M. Diesel
	3	B-B	Switching	Diesel-Elec.	248,000	1,200	April	1957	G. M. Diesel
	16	B-B	Passenger	Diesel-Elec.	258,000	1,750	April	1957	G. M. Diesel
	20	B-B	Passenger	Diesel-Elec.	258,000	1,750	December	1957	G. M. Diesel
	18	B-B	Rd.-Sw.	Diesel-Elec.	224,000	1,200	December	1957	G. M. Diesel
	56	B-B	Rd.-Sw.	Diesel-Elec.	230,000	1,750	December	1957	G. M. Diesel
	28	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,750	December	1957	G. M. Diesel
	10	B-B	Switching	Diesel-Elec.	230,000	900	December	1957	G. M. Diesel
	33	....	Switching	Diesel Elec.	.....	1,000	April	4th qtr.	Montreal Locomotive
	28	....	Rd.-Sw.	Diesel-Elec.	.....	1,600	April	4th qtr.	Montreal Locomotive
	19	....	Rd.-Sw.	Diesel-Elec.	.....	1,000	April	4th qtr.	Montreal Locomotive
Canadian Pacific	19	B-B	Rd.-Sw.	Diesel-Elec.	260,000	1,600	January	September	Montreal Locomotive
	10	B-B	Rd.-Sw.	Diesel-Elec.	260,000	1,600	January	October	Canadian Locomotive
	2	B-B	Switching	Diesel-Hyd.	88,000	500	May	December	Canadian Locomotive
	73	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	September	1957	G. M. Diesel
Essex Terminal	1	B-B	Switching	Diesel-Elec.	248,000	1,200	February	March	G. M. Diesel
Midland	1	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,750	August	1957	G. M. Diesel
Ontario Northland	4	B-B	Rd.-Sw.	Diesel-Elec.	258,500	1,750	May	Jan. '57	G. M. Diesel
	2	B-B	Rd.-Sw.	Diesel-Elec.	258,500	1,600	May	Feb. '57	Montreal Locomotive
Pacific Great Eastern	8	B-B	Rd.-Sw.	Diesel-Elec.	226,000	1,600	January	May-June	Montreal Locomotive
	2	B-B	Rd.-Sw.	Diesel-Elec.	226,000	1,800	August	July '57	Montreal Locomotive
Quebec North Shore & Labrador	6	B-B	Rd.-Sw.	Diesel-Elec.	258,000	1,750	September	1957	G. M. Diesel
Roberval & Saguenay	1	B-B	Switching	Diesel-Elec.	244,000	1,200	April	November	G. M. Diesel

LOCOMOTIVE ORDERS—Export

Argentine State	25	C-C	Freight	Diesel-Elec.	214,000	1,980	June	June '57	General Electric
British Columbia Electric	2	....	Rd.-Sw.	Diesel-Elec.	130,000	900	October	Aug. '57	Electro-Motive
Canadian National	15	....	Rd.-Sw.	Diesel-Elec.	.....	1,800	April	September	Alco Products
	10	....	Switching	Diesel-Elec.	.....	1,000	April	September	Alco Products
	42	....	Rd.-Sw.	Diesel-Elec.	.....	1,750	April	Apr. '57	Electro-Motive
	8	....	Switching	Diesel-Elec.	.....	900	April	October	Electro-Motive
	2	....	Rd.-Sw.	Diesel-Elec.	.....	1,200	April	Apr. '57	Electro-Motive
Chilean State	11	C-C	Rd.-Sw.	Diesel-Elec.	140,000	720	March	Feb. '57	General Electric
	15	B-B	Rd.-Sw.	Diesel-Elec.	140,000	720	March	Apr. '57	General Electric
	5	C-C	Freight	Diesel-Elec.	220,000	1,600	March	November	General Electric
Costa Rica	14	B-B	Switching	Diesel-Elec.	140,000	....	Feb.-Apr.	June '57	General Electric
Empresa Nacional (Argentine)	25	A1A	General	Diesel-Elec.	184,000	1,310	August	Feb. '57	Electro-Motive
Guantanamo	1	B-B	Freight	Diesel-Elec.	137,600	720	November	December	General Electric
Indonesian	25	A1A	General	Diesel-Elec.	163,000	875	January	1st qtr. '57	Electro-Motive
Mogiana (Brazil)	5	B-B	General	Diesel-Elec.	167,000	1,310	September	Apr. '57	Electro-Motive
	25	B-B	General	Diesel-Elec.	167,000	1,310	November	July '57	G. M. Diesel
National of Mexico	10	B-B	Freight	Diesel-Elec.	240,000	1,980	August	November	General Electric
	3	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,000	May	June	Alco Products
	39	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,000	September	December	Alco Products
	5	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,800	October	December	Alco Products
	25	B-B	General	Diesel-Elec.	254,000	1,750	Aug.-Sept.	Sept.-Nov.	G. M. Overseas
	27	B-B	General	Diesel-Elec.	172,000	1,310	October	Oct.-Dec.	G. M. Overseas
	1	B-B	Switching	Diesel-Elec.	245,000	1,750	October	October	G. M. Overseas
Philippine	1	B-B	Freight	Diesel-Elec.	140,000	720	August	Feb. '57	General Electric
Rio Grande do Sul (Brazil)	20	A1A	General	Diesel-Elec.	177,000	1,310	September	May '57	Electro-Motive
Santas a Jundiai (Brazil)	45	B-B	Rd.-Sw.	Diesel-Elec.	176,000	720	1956	1957	General Electric
Saudi Arabian	3	B-B	General	Diesel-Elec.	236,000	1,750	Mar.-Oct.	Nov.-Apr.'57	Electro-Motive
Vale do Rio Doce (Brazil)	6	B-B	....	Diesel-Elec.	166,000	1,310	February	June	G. M. Overseas

Q 1956 PASSENGER CAR ORDERS

Purchaser	No.	Type	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Atchison, Topeka & Santa Fe	3	RPO	71	5	Steel	..	113,500	February	June '57	ACF Industries
	3	Bag.-Mail	61	5	Steel	..	108,500	February	July '57	ACF Industries
	2	Business	85	..	Stainless	..	.....	January	Feb. '57	Budd
Atlantic Coast Line	1	Dining	85	..	Alloy Steel	36	160,000	April	Aug. '57	Company Shops
	1	Bag.-Dorm.	85	..	Alloy Steel	..	121,000	April	July '57	Company Shops
	1	Baggage	85	..	Alloy Steel	..	125,000	April	July '57	Company Shops
Baltimore & Ohio	4	RDC-1	..	..	Steel	90	123,300	April	Oct. '56	Budd
	2	RDC-2	..	..	Steel	48	134,900	April	Oct. '56	Budd
Boston & Maine	2	RDC-1	..	..	Steel	90	118,000	January	August	Budd
	2	RDC-2	..	..	Steel	71	119,000	January	September	Budd
	30	RDC-9	..	..	Steel	94	103,800	January	December	Budd
	3	RDC-1	..	..	Steel	90	118,000	October	Feb. '57	Budd
	35	Exp. Refrig.	52	..	Steel	..	.....	September	.....	GATC
Chicago & North Western	16	Gallery-Coach	85	..	Alloy Steel	161	145,200	January	Sept. '56	Pullman-Standard
Chicago, Burlington & Quincy	10	Gallery-Coach	85	5	Stainless	148	.....	October	Aug. '57	Budd
Chicago, Rock Island & Pacific	2	RDC-3	..	..	Steel	49	122,700	January	July	Budd
Delaware & Hudson	25	Exp. Bagg.	65	8	Steel	..	90,000	October	Sept. '57	ACF Industries
Jersey Central	3	RDC-1	..	..	Steel	90	113,200	June	Dec. '55	Budd
Manitou & Pikes Peak	1	Coach	40	..	Alum. Alloy	56	18,000	January	June '56	Winter-Weiss-Denver
Minneapolis & St. Louis	2	RDC-4 (mod.)	..	..	Steel	17	125,000	March	Jan. '57	Budd
Northern Pacific	10	Baggage	71	8	Steel	..	98,500	September	June '57	Pullman-Standard
	1	RDC-3	..	..	Steel	33	116,770	March	Sept. '56	Budd
Southern Pacific	21	Gallery-Coach	85	..	Steel	145	163,300	February	Spring '57	ACF Industries
Union Pacific	15	Baggage	71	5	Steel	..	113,600	July	2nd hlf. '57	ACF Industries
	35	Postal	71	1	Steel	..	108,100	July	2nd hlf. '57	ACF Industries

PASSENGER CAR ORDERS—Canada

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Construction	Weight	Date Ordered	Date of Delivery	Builder
Canadian National	7	Generator	40	10	Steel	..	.....	February	Oct. '56	Canadian C&F
	5	Dinette	85	6	Steel	25	.....	July	Nov. '57	Canadian C&F
	50	Exp. Refrigerator	40	0	Steel	..	77,000	May	1st qtr. '57	Marine Industries
	20	Baggage	76	5	Steel	..	.....	May	1st hlf. '57	National Steel
	2	Coach	62	7	Steel	50	.....	September	4th qtr. '57	National Steel
	2	Baggage	62	7	Steel	..	.....	September	4th qtr. '57	National Steel
	1	Dining	62	7	Steel	24	.....	September	4th qtr. '57	National Steel
	1	RDC-3	..	..	Steel	48	113,100	June	Jan. '57	Budd
	1	RDC-1	..	..	Steel	89	108,000	September	Feb. '57	Budd
	3	RDC-1	..	..	Steel	89	108,000	October	1st hlf. '57	Budd
	1	RDC-3	..	..	Steel	48	113,100	October	1st hlf. '57	Budd
	4	RDC-4	..	..	Steel	..	105,200	October	1st hlf. '57	Budd
Canadian Pacific	12	RDC-1	..	..	Steel	90	118,500	1956	1956-1957	Budd
	4	RDC-2	..	..	Steel	71	119,500	September	1956-1957	Budd
	7	RDC-2	..	..	Steel	71	119,000	January	June-July	Budd
	1	RDC-3	..	..	Steel	49	122,700	January	July	Budd
	2	RDC-4	..	..	Steel	..	113,800	January	July	Budd
Pacific Great Eastern	3	RDC-1	..	..	Steel	89	115,100	March	Sept. '56	Budd
	4	RDC-3	..	..	Steel	48	119,700	March	1956-1957	Budd

R LOCOMOTIVE OWNERSHIP

STEAM LOCOMOTIVES

	12 Mo. 1954	Nov. 1, 1955	Nov. 1, 1956
Passenger	1,193	776	377
Freight	5,990	4,092	2,556
Freight or Passenger	515	373	228
Switch	1,451	1,078	718
Total	9,149	6,319	3,879

DIESEL-ELECTRIC LOCOMOTIVE UNITS

	12 Mo. 1954	Nov. 1, 1955	Nov. 1, 1956
Passenger	2,333	2,366	2,059
Freight	11,636	12,199	8,266
Multiple Purpose	1,095	1,117	8,199
Switch	8,579	8,947	7,482
Total	23,643	24,629	26,006

S MOTIVE POWER STATISTICS

FREIGHT SERVICE	10 Months Ended with October 1956	1955
Road locomotive-miles (000) (M-211):		
Total, steam	39,479	54,816
Total, diesel-electric	372,278	353,681
Total, electric	7,300	7,515
Total, locomotive-miles	421,569	418,212

MOTIVE POWER STATISTICS (continued)

FREIGHT SERVICE	10 Months Ended with October 1956	1955
Gross ton-miles (excluding locomotive and tender)	1,217,584	1,182,662
Train-miles	396,912	393,436
PASSENGER SERVICE	**1956**	**1955**
Road motive-power miles (000) (M-213):		
Steam	7,409	13,993
Diesel-electric	202,834	202,407
Electric	12,458	13,019
Total	222,702	229,425
YARD SERVICE*	**1956**	**1955**
Freight yard switching locomotive-hours (000) (M-215):		
Steam, coal burning	2,367	2,966
Diesel-electric	35,111	33,420
Total	36,446	35,589

*Note: Yard Service figures for nine months ended September only.

T 1956 RAILWAY PURCHASES

1956 RAILWAY PURCHASES *

	(000)
Equipment **	$ 495,485
Rail	89,400
Crossties	86,800
Other Material	1,298,900
Total from Manufacturers	$1,970,585
Fuel	430,000
Grand Total	$2,400,585

*Subject to revision.
**Estimated value of orders.

U CONSTRUCTION PROJECTS

New Yards Pace Construction

More attention is being given by railroads to the improvement of their terminal switching facilities than to any other type of property improvement. This is evidenced by reports received by Railway Age from railroads in the United States, Canada and Mexico relating to construction projects, completed or under construction during 1956, having a cost of $1 million or more.

Fifteen yard-improvement projects were reported completed by 11 railroads during the past year at a total cost of more than $50 million. Outstanding among these were the Citico yard of the Southern at Chattanooga, the New York Central's new yard at Buffalo, the Milwaukee's new yard at St. Paul, and Mimico yard at Toronto on the Canadian National.

Second place, measured by cost, went to new bridge structures and the rehabilitation of bridges. The three most costly projects in this category were all on the New York Central and included its new bridge over the Harlem river in New York, built at a cost of $21.4 million, and its two new bridges over the Cuyahoga river in Cleveland which were reconstructed at costs of $5 million and $3 million, respectively. Another outstanding reconstruction project was the steel viaduct of the New Haven at Bridgeport, Conn., which cost $2.55 million.

The third most expensive category of construction work was for grade-separation projects. These included the $7-million project of the Jersey Central Lines from Dunellen to Plainfield, N. J., the $3.85-million project of the New York Central at Mt. Kisco, N.Y., and the $3.4-million project at Springfield, Ohio, where the New York Central constructed an overhead crossing for U.S. Highway No. 40.

Following are brief descriptions of construction and improvement projects, costing $1,000,000 or more, which were completed during 1956 or were underway at the end of the year. The figures in parentheses indicate percentage of completion.

Alaska: Widen embankments, re-lay main tracks and turnouts with 115-lb material, renew ties, and place ballast between Seward and Portage, $4,231,290 (100); construct a two-berth dock, with two warehouses at the Marine Terminal, Seward, $4,791,118 (75); and construct a 1,000-car capacity terminal yard at Seward, $1,122,889 (25).

Atchison, Topeka & Santa Fe: Construct new line, Marynel, Tex.,-to Silver (100); extend freighthouse, Corwith, Ill. (80); make yard improvements, Corwith (10); construct line change, Craig, Kan., to Olathe (95); and construct new line between Hesperia, Cal., and Cushenberry (100).

Baltimore & Ohio: Yard improvements, Connellsville, Pa., $1,900,000 (100); railroad changes necessary for Penn-Lincoln Parkway, Pittsburgh, $4,000,000 (75); reconstruct bridge over Cuyahoga river, Cleveland, $3,250,000 (90); construct new bridge over Arthur Kill, New York, $11,000,000 (4); construct 23rd street freight terminal, New York, $1,900,000 (20); yard and terminal facilities, Cumberland, Md., $13,000,000 (5); grade crossing elimination project Dayton, Ohio, $5,700,000 (75); and reconstruct 21 railroad bridges at various locations, $1,250,000 (100).

Boston & Maine: Construct new service building for Budd cars, Somerville, Mass., $1,000,000 (60).

Canadian National: Improve and expand yard facilities, Edmundston, N.B., $1,250,000 (50); construct new yard, including the building of six 100-car capacity tracks and 22 classification tracks, and also construct new yard office with tower for yard communications, Joffre, Que., $2,250,000 (60); provide new freight shed buildings, general freight office, platforms, teamways, team tracks to replace facilities destroyed by fire, Montreal, $7,000,000 (100); construct new marshalling yard in parish of St. Laurent, Montreal, $28,500,000 (10); replace trackage for electric cars with vehicular roadway on Victoria Bridge, Montreal, $2,200,000 (100); railway work in connection with new hotel, Montreal, $5,000,000 (50); diesel maintenance shop and heating plant at Cote de Liesse, Montreal, $3,700,000 (2); car-shop facilities, including car-repair shop, paint shop, trackwork, stores building extension and extension to work-equipment shop, Pt. St. Charles, Montreal, $4,000,000 (100); main line diversion, entrance to Cote de Liesse yard, Turcot West-Dorval, $4,900,000 (2); rearrange, enlarge and improve yard, Mimico, near Toronto, $4,000,000 (100); construct express garage and office building, Toronto, $4,750,000 (95); new terminal yard at Torrey, Flint, Mich., $2,300,000 (3); new classification yard, Battle Creek, Mich., $4,000,000 (10); construct 292-mile branch line, Beattyville-St. Felicien. Que., $30,800,000 (50); construct 27-mile branch line, Hillsport, Ont., to Manitouwadge, $4,400,000 (100); and construct branch line to Heath Steele Mines, Bartibog, N.B., $2,800,000 (7).

Canadian Pacific: Reline spiral tunnels near Field, B. C., $2,000,000 (10); modernize station, station tracks and interlocking plant Calgary, Alta., $5,000,000 (20); repair piers, replace steel span and place scour arrestors at Bridge 0.8, Mission subdivision. $1,850,000 (70); and construct new 21.4-mile spur line south from Brocket, Alta., $1,630,000 (90).

Canton: Construct ore unloader at Canton ore pier, Baltimore, $1,200,000 (90).

Chesapeake & Ohio: Construct low-level pier complete with ore-handling equipment and supporting tracks, Newport News, Va., $8,307,500 (65); construct addition to Pier 15 for dumping and loading coal into ships, Newport News, $3,181,700 (100); replace steel spans in portion of viaduct west of Rivanna Junction and fill part of west end, Richmond, Va., $1,138,000 (90); replace steel spans in viaduct east of Rivanna Junction to Nicholson street, Richmond, $7,049,000 (25); make line changes at 29 points and respace signals, Rivanna subdivision, $1,143,200 (70); install 23.3 miles of CTC, MacDougal to Chelyan, W. Va., $1,209,000 (25); reconstruct westbound manifest yard, Russell, Ky., $5,463,300 (50); extend and improve facilities in fabrication and car shops, Russell, $1,593,800 (40); modernize reclamation shop, Russell, $577,600 (75); install car retarder system in eastbound classification yard, Stevens, Ky., $1,069,000 (100); construct passenger-car shop, relocate wheel shop, axle shop and storage facilities, Huntington, W. Va., $1,429,350 (100); install CTC system and rearrange cross-overs, Columbus to Delaware and Marion to VR Tower, Ohio, $1,701,300 (100); construct tracks and service facilities to serve Lincoln division, Ford Motor Company, Wixom, Mich., $1,031,000 (95).

Chicago & North Western: Reconstruct bridge over Ridge avenue and Emerson street, Evanston, Ill., $1,100,000 (55); construct new subway at Lincoln avenue and Addison street, Chicago, $1,200,000 (10); construct new car shop and other facilities, Clinton, Iowa, $4,000,000 (50); relocate main track, Negaunee, Mich., $2,000,000 (10).

Chicago, Burlington & Quincy: Construct hump retarder yard, Cicero Ill., $4,016,000 (65).

Chicago, Milwaukee, St. Paul & Pacific: Construct additional tracks and convert existing flat-switching yard to a modern

retarder yard comprising 35 classification tracks, 4 eastbound and 3 westbound receiving tracks, 3 eastbound and 3 westbound departure tracks, and also construct modern repair yard and icing facilities, St. Paul, Minn., $4,900,000 (100).

Chicago South Shore & South Bend: Construct 5.2 miles of double track at new location to by-pass paved street trackage through East Chicago, Ind., $2,247,000 (100).

Delaware & Hudson: Construct diesel shop, Colonie, N.Y., $1,000,000 (100).

Detroit, Toledo & Ironton: Construct new tracks and yard facilities to serve new plant of Ford Motor Company, Lima, Ohio, $1,030,000.

Duluth, Missabe & Iron Range: Construct diesel-locomotive maintenance and repair facilities, Proctor, Minn., $1,000,000 (5).

Erie: Construct yard facilities and lead tracks to serve General Motors Fisher Body plant, Ontario, Ohio, (100); construct yard and car-repair shop facilities, Meadville, Pa., (36).

Ferrocarril del Pacifico: Rehabilitate 416 miles of main track, including relaying 416 miles of 65-lb rail with 100-lb rail, renew 380,000 crossties, distribute 530,000 cu yd ballast and surface 416 miles of main track at various locations, $20,000,000 (100); rehabilitate telegraph and telephone systems, including rebuilding 550 miles of pole line, restringing wire, installing carrier teletype system and telephone dispatching system on 550 miles of line at various locations, $1,000,000 (100).

Grand Trunk Western: Install CTC system, with control machine at Battle Creek, Mich., in lieu of automatic block-signal system on double tracks, and remove portions of the second track between Durand and Port Huron, $1,200,000 (84); construct new terminal classification yard on new site and revamp portion of present Nichols yard for local industrial yard at Battle Creek, Mich., $4,000,000 (14); construct terminal and industrial classification yard with engine and car-servicing facilities on new site, replacing present Belsay yard, Flint, Mich., $2,460,000 (30).

Great Northern: Construct hump retarder yard consisting of 6 receiving and departure tracks and 40 classification tracks, making a total of 78.5 miles of yard tracks, with push-button controlled yard retarders, Minot, N.D., $6,250,000 (100); construct line change, Edmonds, Wash., $1,277,000 (5).

Jersey Central Lines: Grade crossing elimination project, Dunellen to Plainfield, N.J., $7,017,000 (100).

Kansas City Terminal: Construct three-track interchange route, including two new interlocking towers, equipped with push-button controls, Kansas City, Mo., $2,800,000 (65).

Louisville & Nashville: Construct a modern hump-retarder yard, consisting of 7 receiving tracks, 40 classification tracks, 9 departure tracks and one through freight set-out track, with automatic switching and speed control, an electronic scale and modern communication system, Boyles yard, Birmingham, Ala., $8,581,903 (5); construct modern hump-retarder yard, consisting of 5 receiving tracks, 16 classification tracks, and 8 departure tracks, designed for future expansion, and including an electronic scale, icing facilities and modern communication facilities at Hills Park yard, Atlanta, Ga., $5,870,198 (65); reconstruct bridge over Pearl river with six 72-ft through-girder spans, one 60-ft deck-girder span, re-using present through-truss draw span on present alinement, about 6 ft above present grade, $1,138,500 (95).

Missouri Pacific: Raise main track at levee crossings and unprotected areas including construction or reconstruction of all fills and bridges, Menard to MV Junction, Ill., $1,597,000 (97).

Nashville, Chattanooga & St. Louis: Construct retarder yard and improve existing yard facilities at Hills Park, Ga., joint with the L&N, $6,457,217 (60).

National Railways of Mexico: Construct new yard and terminal at Mexico Valley, $1,015,559 (100).

New York Central: Eliminate five grade crossings, Batavia, N.Y., $12,900,000 (75); construct an electrically controlled freight yard, Buffalo, N.Y., $10,600,000 (100); eliminate four grade crossings, Mt. Kisco, N.Y., $3,850,000 (100); reconstruct bridge over Harlem river, New York, $21,400,000 (100); construct overhead viaduct carrying Byrne Road over the railroad, Nasby, Ohio, $1,500,000 (100); construct underpass grade separation between 2nd and 3rd streets, Elkhart, Ind., $1,700,000 (100); reconstruct Cuyahoga River bridge, Cleveland $5,000,000 (95); construct underpass carrying Lake Front Line tracks over East Inner Belt Expressway near East 30th street, Cleveland, $1,750,000 (5); construct Congress Street Expressway through the LaSalle street Station, Chicago, $2,000,000 (100); construct underpass grade separation at Dorr street, Toledo, Ohio, $2,400,000 (100); construct underpass separation at Center street, Fostoria, Ohio, $1,500,000 (10); construct underpass grade separation at Saginaw street, Lansing Mich., $1,300,000 (45); build track elevation and underpass grade separation carrying railroad over First street, Dayton, Ohio, $6,000,000 (80); construct two underpass grade separations, Columbus, Ohio, $3,600,000 (60); construct overhead grade separation for US 40, Springfield, Ohio, $3,400,000 (100); reconstruct Cuyahoga River bridge No. 2, Cleveland $3,000,000 (100); construct underpass grade separation, Brookpark and Smith roads, Cleveland, $2,300,000 (25); construct central viaduct over Inner Belt Expressway, Cleveland, $9,700,000 (85); construct underpass carrying IHB over South Cicero avenue, Chicago, $2,400,000 (100); make yard improvements at Blue Island yard, $2,500,000 (95); and reconstruct underpass grade separation on Ashland avenue at 40th St., Chicago $2,500,000 (30).

New York, Chicago & St. Louis: Grade elimination project, Fort Wayne, Ind., $1,409,158 (100).

New York, New Haven & Hartford: Reconstruct steel viaduct with concrete slabs on caissons, Bridgeport, Conn., $2,550,000 (90).

Norfolk & Western: Purchase abandoned right of way and facilities of Clinchfield and construct a 6.4-mile branch line up Dumps Creek & Hurricane Fork with 755-ft wye track, Carbo, Va., $1,784,000 (100); enlarge yard by construction of approximately 21 miles of track and install car retarders at coal piers, Lamberts Point, Va., $1,783,500 (100); enlarge Portlock Yard by construction of approximately 25 miles of track, Norfolk, Va., $1,727,500 (100); construct new freight-car building and repair facilities at East Roanoke shops, Roanoke, Va., $2,010,000 (80); install modified type of traffic control between Bluefield, Va., and Norton and on the Dry Fork branch between Caretta Branch Junction and Cedar Bluff, Clinch Valley District, $1,049,000 (20).

Pennsylvania: Rearrange ticket sales and service facilities in Pennsylvania Station, New York (90); complete additional yard and enginehouse facilities to permit abandoment of East Trenton enginehouse, Morrisville, Pa., (85); construct freight-car repair shop, Hollidaysburg, Pa. (100); improve passenger terminal, Pittsburgh, Pa. (81); yard development, Conway, Pa., (70); construct 3-mile spur track to serve plant at Twinsburg, Macedonia, Ohio (100); construct yard tracks of new plant at Twinsburg, (55); extend river branch to Buck Hill, Powhatan, Ohio (55). Total approximate cost of these projects $81,283,712.

Reading: Modernize yard facilities, Reading, Pa., $1,285,000 (55); reconstruct bridge over Schuylkill river, Reading, $1,525,500 (90); and install three gantry cranes at Pier G, Philadelphia, $1,240,000 (65).

Sacramento Northern: Replace existing timber trestle destroyed by flood with new 1,520-ft concrete ballast-deck bridge on precast concrete piles across the Feather River. This project also includes the raising of two existing 150-ft steel spans and the construction of approaches, including a precast concrete bridge over Second street in Yuba City, Marysville, Cal., $1,065,000 (100).

St. Louis-San Francisco: Construct new hump yard and appurtenances, Capleville, Tenn., $9,500,000 (75); construct hump yard and modernize facilities, West Tulsa, Okla., $6,500,000 (10); and modernize and enlarge 19th street yard, Kansas City, Mo., $1,000,000 (25).

St. Louis Southwestern: Relocate 17.5 miles of main track railroad, account of the construction of Texarkana reservoir by U.S. Government, Texarkana-Maples, Tex., $5,700,000 (100).

Seaboard Air Line: Construct system wheel and axle shop, Hamlet, N.C. (100); construct additional yard and other track facilities for handling increased production from rock-mining operations, Brooksville, Fla., and Tampa (70).

Southern: Construct track extensions to existing Inman freight yard, Atlanta, Ga., $15,000,000 (18); construct freight-car repair shop, Hayne, S.C., $1,500,000 (95); extend Citico yard and construct new connecting track, Chattanooga, Tenn., $13,800,000 (99); and remove second main track and install CTC, Greenville and Armour, Ga., $3,639,000 (75).

Southern Pacific: Between Indio, Cal., and Thermal, convert 4.33 miles of siding to second main track. Construct 4.55 miles of new second main track. Between Thermal and Yuma, Ariz., install 114 miles of CTC, including construction of five new sidings, extension of 11 existing sidings and the retirement of 11 sidings. Between Colton, Cal., and Indio, make 8 siding connections involving the construction of 10.7 miles of new track and rearrange existing CTC, $7,000,000 (100); construct first step retarder yard, consisting of five classification tracks, runaround track, tail track and necessary connections and 200-ton motion-weighing track scale, automatic switching and necessary buildings, Eugene, Ore., $1,600,000 (100); construct second step of retarder yard, consisting of 11 classification tracks, one retarder, control machine, tower, and necessary communications and electrical work, Eugene, $735,095 (95); construct a stable permanent railroad roadbed, consisting of a rock fill or embankment, extending across Great Salt Lake, Utah, approximately 13.8 miles in length, connecting with existing fills and provided with either a 2,000-ft timber trestle or a large culvert at the west end and a 1,000-ft timber trestle or a large culvert at the east end for lake equalization and construct a single-track railroad together with the appurtenances across this embankment, including CTC, Salt Lake City, $48,939,700 (20).

Spokane, Portland & Seattle: Construct revetment work due to Dalles Dam Pool on main line, $1,300,000 (30); construct revetment work and rebuild facilties at Wishram yard, $1,456,000 (70); convert a fixed through truss to a lift span and raise bridge 5.3 over Columbia River, $1,600,000 (20).

Union Pacific: Construct and rearrange trackage, replace stock yards in new location, construct new diesel shop, locker buildings and machine shop platforms, Council Bluffs, Iowa, $2,791,256 (100); acquire additional right of way, relocate and relay tracks, construct freighthouse, garage, two-story office building, and tube system, install gantry crane and construct diesel shop, Kansas City, Kan., $4,897,000 (5); install 264.5 miles of CTC, extend and retire sidings, acquire additional right of way, construct 10.25-mile line change, replacing 7.51 miles of double track and 1.1 miles of single track with 8.44 miles of single track, construct passing and set-out track, Granger, Wyo., to Pocatello, Ida., $7,525,711 (70); construct line change required in connection with the construction of The Dalles Dam, Dalles and Hook, Ore., $7,313,178 (100); acquire additional right of way, construct new track, rearrange existing track, install three new track scales and contruct freighthouse, office building, garage and platforms, Albina, Ore., $6,110,750 (5).

Western Maryland: Construct pier additions and improvements at McComas Street Terminal, Port Covington, Baltimore, $3,960,000 (50).

Western Pacific: Replace timber lining in five tunnels with concrete lining, Niles, Belden, Paxton and Keddie, Cal., $1,115,000 (81); construct new tunnel through slide caused by storms, Storrie, Cal., $2,000,000 (100).

How to Get More Net—4

(Continued from page 13)

Several fundamental changes are essential if railroad credit is to be significantly restored: The industry should be allowed greater flexibility in rate making; railroads should be allowed to own barge lines, passenger and freight airplane service and trucking companies, with unrestricted operation (i.e., elimination of parallel mileage, key points, prior or successor hauls); railroads should be allowed to abandon non-profitable branches and non-profitable passenger service; railroads should be granted tax abatement on heavy deficit commutation services and should be allowed to increase rates for both freight and passenger services immediately after the granting of wage increases; railroads should be allowed to effect marked savings through intelligently planned mergers; and labor should forego non-realistic and non-economic featherbedding practices.

Assuming within the next decade even a partial realization of these steps, railroads would be, for the first time in 30 or 40 years, in a position to emerge from their financial "doghouse" and to seek and obtain equity capital, so essential to thier financial health. Only by following constructive policies like those outlined above will any worthwhile increase in net income be realized under present conditions.

—Pierre R. Bretey, Hayden, Stone & Co., New York.

How to Get More Net—3

(Continued from page 12)

public — would greatly enhance our mutual interests.

—Jesse Clark, president, Brotherhood of Railroad Signalmen.

EMPLOYMENT STABILITY SOUGHT

If we accept apparently well-founded forecasts that business activity will continue to expand, we can believe the prospects for the railroads, both as to earnings and employment, are bright.

Despite large expenditures on modernization, we still have a freight car shortage which holds back the efforts of the railroads to give maximum service to industrial and agricultural shippers. In this particular situation at least, it is difficult to maintain that the industry has done everything it can to improve its competitive position.

We want the industry to prosper in terms of the stability of employment as well as in terms of earnings for its investors. The welfare of employees and investors should be considered together.

We should acknowledge that in a growing economy there are two possible programs for our industry. We can take the business that comes without any special effort to better our position. Or, the railroads can fight for necessary legislation and push a stepped-up program of modernization as part of a program to improve their competitive position. We must adopt the latter, forward-looking, program for our industry, and adopt these goals to improve our competitive position:

1. Elimination or reduction of subsidies granted to competitors of railroads.

2. Enactment of the rate - freedom proposals by which the railroads would be accorded more leeway to meet competition. Legislation to make this possible should be one of the first orders of business of the 85th Congress.

3. Repeal of the taxes on freight charges and passenger fares which fall

with particular severity on the railroads.

4. Enlargement of the capital improvement program. I believe that an improvement program of [$20 billion expenditure in next decade] will mean a great increase in the productivity of railroad workers.

5. Encouragement and expansion of experimentation with lightweight passenger trains and piggyback service.

—W. P. Kennedy, president, Brotherhood of Railroad Trainmen.

PASSENGER SERVICE NEEDS BOOST

The railroads, I feel, will receive a greater share of passenger business this year then last, but due to the increases in fares the air lines may profit more than the railroads. Increased passenger rates, in my opinion, will cause many to use the air lines who have not done so in the past.

The railroads in the East could more effectively advertise their passenger service. They have not kept pace with those in the West. Attractive pamphlets placed in every hotel room of our larger cities would be read by many people. Emphasizing safety on the rails would be effective.

I do not think the railroads have improved their facilities fast enough to keep pace with other forms of transportation. Much equipment is outmoded and dilapidated. The practice of placing the newest and best equipment on some trains and using the old on others causes much criticism and is not conducive to passenger travel. There is a strong opinion among the traveling public that the railroads are attempting to discourage passenger service. This opinion must be corrected.

—T. C. Carroll, president, Brotherhood of Maintenance of Way Employees.

How to Get More Net—2

(Continued from page 11)

PROBLEM ISN'T ALL POLITICAL

From all of this, it would seem that these particular railroad executives consider the nation's capital as the most important way-station on the road to more net income, and perhaps they do. But not all the avenues they suggest lead to Congress or the commission—at least not directly.

Ben W. Heineman, chairman of the Chicago & North Western, sums up his view on how to get more net in one word: mechanization—mechanization to reduce operating expenses in the face of rising labor costs and what he considers an almost inevitable burden, a controlled rate structure.

Mr. Fraser of the Katy puts in a plug for further development of on-line industries; and he suggests, as does Robert S. Macfarlane of the Northern Pacific, that consolidation and coordination of rail facilities might well be worth investigation. Mr. Neff, too, would examine duplicate rail facilities, although he questions the size of actual savings that would result. Mr. Macfarlane looks for reduced costs through more CTC and further improvements in yards, locomotives and management procedures.

Mr. Touhy would capture a larger share of the shipping market with improved service and specialized equipment. Mr. White thinks a bigger freight car fleet is imperative. Mr. Roddewig is inclined to accept as inevitable the fact that railroads must compete against subsidy, and he would ask only that railroaders do the best they can within that framework.

To solve a short-term problem which must plague many southwestern roads, Mr. Fraser would like it to rain heavily and long in Texas.

While Mr. Heineman sees the North Western's modernization program as just getting under way, Mr. Neff thinks that technological improvement of the Missouri Pacific is far enough along that no great increase in net is apt to come from further steps in this direction. The MP already has mechanized its trackwork, dieselized and installed train radio, speeded accounting operations and bought CTC for its high-density track, Mr. Neff points out.

The North Western, on the other hand, needs to do in two or three years what other roads have done in perhaps 15, its chairman asserts. Mr. Heineman wants to see the C&NW improved in traditional technological ways—and in ways not yet developed. He points out that even today great savings can be made on his road through mechanizing processes not usually considered candidates for such action.

For instance, the North Western plans to spend $4.3 million this year in what Mr Heineman calls a "crash program of grade-crossing mechanization." He estimates that the automatic crossing protection installed under this program will save some $2 million in wages a year.

The North Western will convert to mechanized accounting methods a year from now, with dual results, he adds: reduced costs of keeping books and quicker access to figures which show how the railroad is doing.

As for mechanization beyond the traditional sense, Mr. Heineman uses as an example the possibility of suburban trains operated by remote control through automatic signal circuits, with television cameras on each locomotive so that the dispatcher can see what's ahead of each train. He realizes that such an operation is pretty far in the future, but he doesn't think it's at all impossible.

Mr. Heineman believes that the whole history of modern industrial expansion revolves around giving workmen better tools to do their jobs and increase their productivity. He sees no reason why the same theory shouldn't apply to the railroad industry as it has to the automobile industry and many others—with spectacular results.

And if something can be done about what he calls the railroads' controlled rate structure, he wants to pass on these savings to customers, where he can, through lower rates.

AND THEREFORE . . .

These, then, are the views of 10 railroad chief executives on the big question: How can the railroads make more profit? It's safe to say that the big answer won't be found ready-made among these views; it must be worked out according to the needs of individual properties as well as the needs of the industry as a whole. It would seem that the whole thing boils down to one final and basic query: How fast can the job be done?

Newest safety signing system... Reflective Train Control

(And how it works to give you low-cost nighttime safety)

The diesel moves at high speed through the night. Any dangers ahead are hidden by darkness. Then the headlamp picks up a dot of green about ½ mile ahead . . . just about where that siding switch comes in. The engineer's concentrated attention is focused on the bright dot ahead.

The dot quickly grows larger. It is the switch target. Its diamond shape and clear green color tell the engineer the switch is right . . . gives him an easy-to-see, go-ahead signal. If the switch had been open, the red side of the sign would have been seen just as easily . . . in time for the alerted engineer to act.

Almost safely past the switch now, the engineer already sees a new dot ahead. This is the Reflective Train Control system, RTC, a 24-hour-a-day signing system of "Scotchlite" Reflective Sheeting. These durable signs (made quickly and economically in a central sign shop) actually pay for themselves in lowered maintenance costs.

The green diamond flashes past. The switch is crossed safely. The fast-moving train moves smoothly ahead. And the bright warning of durable signs of "Scotchlite" Sheeting, reflected in the diesel headlamp, has again proved its value. In any weather, RTC with "Scotchlite" Sheeting gives your road *true* low-cost nighttime safety.

Reflective Train Control can give *your* road improved operational safety and lower sign production and maintenance costs. Write today to: Minnesota Mining & Mfg. Co., Dept. FQ-1147, St. Paul 6, Minnesota, for full details.

WIDE ANGLE FLAT-TOP®

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SCOTCHLITE

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REFLECTIVE SHEETING

PRODUCT OF 3M COMPANY RESEARCH

The terms "Scotchlite" and "Flat-Top" are registered trademarks of Minnesota Mining & Mfg. Co., St. Paul 6, Minn. General Export: 99 Park Avenue, New York 16, New York. In Canada: P. O. Box 757, London, Ontario.

How this "backseat driver" pays his way

THIS MAN in the brown suit is a "backseat driver," but he's welcome wherever he goes. He's a Westinghouse Air Brake Service Engineer checking the performance of an installation of Westinghouse Air Brakes.

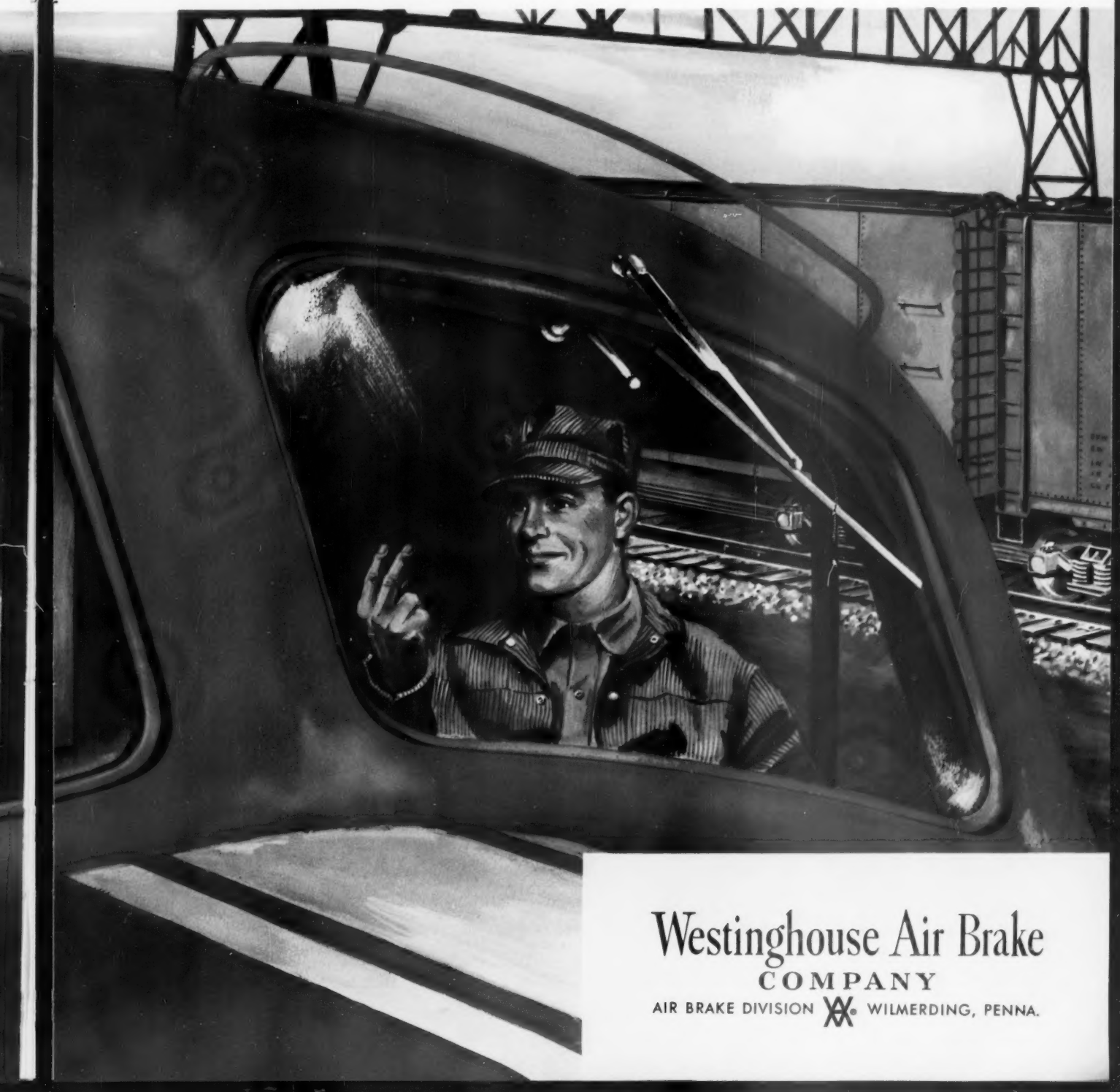
He has ridden thousands of miles at the business end of all types of trains.

He knows air brakes, as he must, to adequately appraise their operation and maintenance.

He's thoroughly trained and experienced. He will see to it that your braking system operates to meet your exacting requirements.

Westinghouse Air Brake Service Engineers, like this man, are on call all the time to check a new installation or consult with you regarding air brake matters.

They roam the country, and the world, for one purpose: to make sure that Westinghouse Air Brakes operate correctly, dependably and efficiently.



Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PENNA.

Here's real progress in reducing diesel wear!

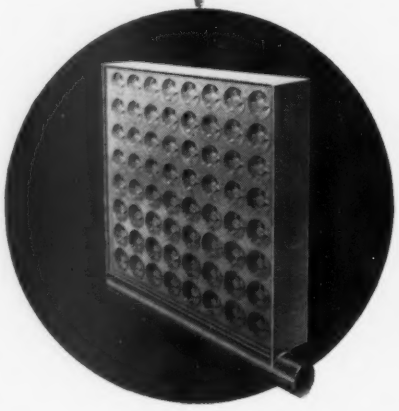
There are many good air cleaners for diesel engines on the market today—oil bath, impingement types, Rotonamic, and others. Each is capable of doing an excellent job, but many fail—why?

The answer is simple—maintenance.

No filter will perform properly unless the manufacturer's instructions are followed. Unfortunately, maintenance on many types is difficult and it is hard to determine if it has been performed properly, until the damage is done.

Not so with the FARR Rotonamic Air Cleaner. Here is the air cleaner designed to function virtually without maintenance...under every operating condition. Rotonamics have performed over 700,000 miles with minimum attention, And you can tell visually and instantly the condition of the ROTONAMICS.

These are some of the reasons why major railroads have applied FARR Rotonamic Air Cleaners on over 3,000 of their diesel units ...and more are being added each day during routine maintenance or annual shopping. Manufacturers offer ROTONAMIC as standard or optional equipment.



Rotonamic's tangible savings make it a "must" for you to investigate. Write for complete catalog information.

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Manufacturing Licensees:
Farr Company Mfg. Ltd.
Montreal, Canada
The Clyde Engineering Co. Pty. Ltd.
Sydney, Australia
Intermit Ltd.
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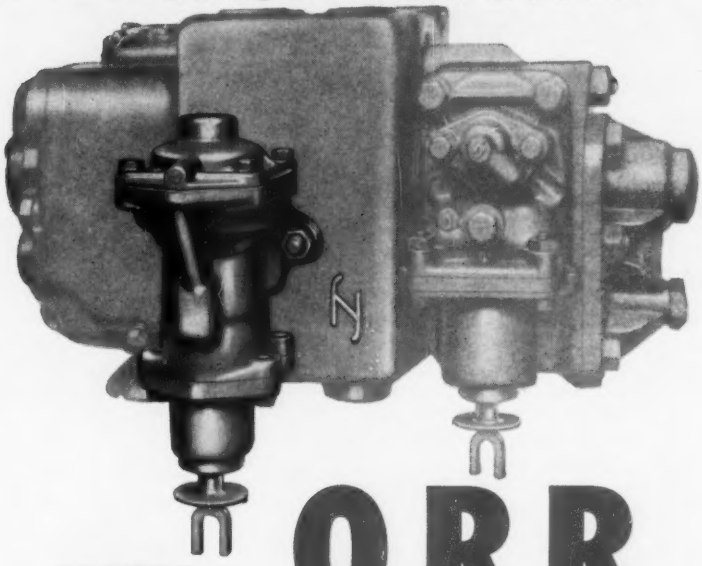
SPEED UP DEPARTURE of Your FAST FREIGHTS···

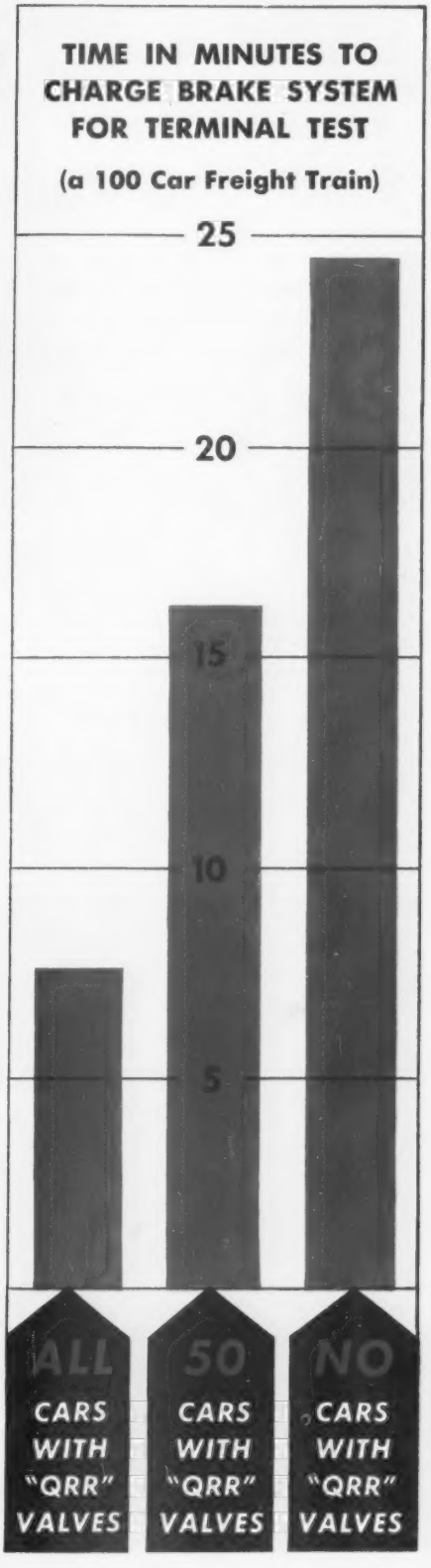


WITH... QRR BRAKE CYLINDER RELEASE VALVES

Save time required for Air Brake tests! With the "QRR" Brake Cylinder Release Valve, air stored in the "AB" Reservoirs is retained when cars are bled for switching. As shown in the chart at the right, up to 70% of the Charging Time required for a 100 Car Train is SAVED when all cars are equipped with "QRR" Brake Cylinder Release Valves. Proportionate Savings in Time are effected with only a portion of the train so equipped.

"QRR" is the proven design authorized by the A.A.R. for unlimited application.

Write for circular 99.



THE NEW YORK AIR BRAKE COMPANY

230 PARK AVENUE . NEW YORK 17, N. Y.

(Continued from page 18)
with suits arising more frequently when injuries are severe. It seems, judging from observations of the claims bureau, that in cases where the injured person employs counsel, payment is greater than in cases where no attorney is retained. However, Mr. Carney raises the question as to whether the net settlement for the injured person—after payment of legal fees—is greater than it would have been in a direct settlement.

A development particularly troublesome to railroads was suggested in the September 1956 issue of the Railroad Trial Counsel's "Chronicle," where it is charged that "in 14 cities in eight states—California, Illinois, Maryland, Minnesota, New York, Ohio, Pennsylvania and Utah—is concentrated more than 60% of the Federal Employers' Liability Act claims in the entire country. And $23,751,738—nearly 30% of the amount paid—went to only three law firms" during the 44-month period ended December 31, 1955.

'Peak-and-Valley' Car Buying on Way Out

General American officer tells Security Analysts that he anticipates elimination of fluctuations in purchases of freight cars will lead to orders for 75,000 to 100,000 units in each of the next five years—Big problem is steel supply

Sam Laud, vice-chairman, General American Transportation Company, told the New York Society of Security Analysts recently that he expects conditions over the next five years to stabilize sufficiently to permit railroads to eliminate "peak-and-valley" fluctuations in their car-buying programs.

He said he anticipates railroad freight-car orders to all manufacturers will call for 75,000 to 100,000 units in each of the next five years.

Reporting on developments in GATC's increasingly diversified business, Mr. Laud commented that he believes railroad-equipment manufacturers have only begun to tap the potential of air-using devices such as are employed in GATC's "Airslide" cars.

The independent freight car building industry faces the new year with a backlog of some 55,000 cars to be built, compared with 69,263 a year ago, according to a year-end statement by Lester N. Selig, president of the American Railway Car Institute. A slightly greater number of cars are on the order books of the railroad shops, Mr. Selig added.

"The big problem facing the car-building program is the availability of steel," Mr. Selig said. "Given enough steel, there is no question about the capacity of the independent car builders to supply all of the cars that might be ordered by railroads in the foreseeable future.

"Expansion of the freight-car fleet to keep pace with expanding population and economic growth is generally recognized by railroad management as one of the urgent necessities of the roads. This has been reflected in the past two years by increased ordering as revenues permitted.

"Long range planning by railroad management rests upon a new national attitude that would relax the legislative and regulatory straightjacket which bars them from aggressive competition for freight business," Mr. Selig concluded.

Deliveries of conventional freight cars by the American Car & Foundry division of ACF Industries "increased substantially" during the past calendar year despite steel procurement problems, according to Samuel M. Felton, president of the division.

Mr. Felton predicted unusually high deliveries for the next six months, provided steel supplies are adequate. He said the division has a backlog of orders for about 17,000 freight cars.

"A major factor in the good overall 1956 showing," Mr. Felton said, "was deliveries in the first half of the year. Scarcity of plate and structural steel, followed by the steel strike—which lost us about a day and a half of production for each day of the strike—slowed freight car deliveries during the last half of the year."

In 1956 ACF introduced the lightweight, multi-purpose "Adapto" and "Lodapto" freight cars, and the high-speed "retractable trailer-hitch" for securing trailers to flatcars.

A continuing shortage of railroad tank cars during 1957 was predicted by Harry J. Leddy, president of Shippers' Car Line Division of ACF Industries. Shippers' Car Line is the third largest lessor of railroad tank cars in the country.

Mr. Leddy based his forecast on "the inability of railroad equipment manufacturers to obtain adequate amounts of steel." He explained that steel production is concentrated at this time on the gage needed for automobiles and appliances rather

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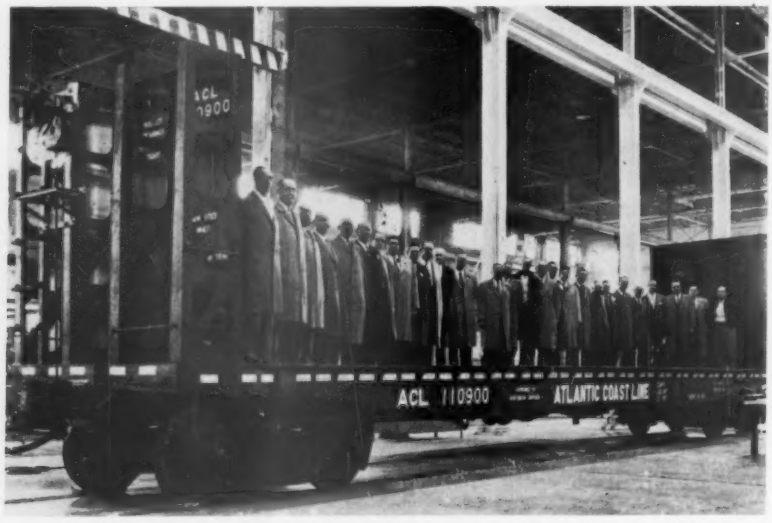


Standing Vote for New Coast Line Pulpwood Cars

Atlantic Coast Line representatives and those of ACF Industries, Inc., General Steel Castings Corporation and other suppliers "test" one of 800 70-ton steel-underframe pulpwood cars ordered by road. Delivery starts this month on order, said to be largest for this particular type of car ever placed.

for 63 years...

PRODUCTS OF

PROGRESSIVE RESEARCH

AND EXPERIENCE

W.H. MINER, INC. CHICAGO

(Continued from page 130)
than on heavy steel for railroad cars.

There were an estimated 153,000 privately owned tank cars in service throughout the country at the end of 1956, compared with 151,935 on December 31, 1955. [The country's railroads owned only 9,490 at the end of 1955, and they are mainly reserved for their own use.] While an estimated 6,000 cars were delivered during 1956, retirements continued to run high.

"Despite the shortage of steel," said Mr. Leddy, "deliveries of tank cars to private companies should amount to 6,500 during 1957. We at Shippers' had approximately 14,200 cars on December 31, 1956, and expect to have 15,000 tank cars operating in our fleet at the end of 1957."

Mr. Leddy also noted that "while the steel shortage prevents the addition of sufficient tank cars to the nation's fleets, the market for the commodities commonly carried in tank cars and the list of these commodities is growing constantly, adding still further to the car shortage." He disclosed that 60% of Shippers' fleet is used for transportation of chemicals, 25% transports petroleum products and 15% is used in shipping food items.

CPR 1956 Return 3.2%, Says Crump

President N. R. Crump in his year-end statement said the Canadian Pacific return on net railway investment in 1956 would be only about 3.2%. This, he commented, was substantially less than earnings in other industries and even less than the current return available to the investor in many Dominion Government bond issues.

"So inadequate a return on rail investment, despite the substantial increase in the demand for essential rail transport which has occurred in 1956," said Mr. Crump, "is compelling evidence of the need for relaxation of outmoded regulation. It also lends a sense of urgency to the efforts of the Canadian Pacific to avail itself without hindrance of the advantage of technological change."

The head of the CPR announced that in 1956, when the company passed its 75th birthday, the system had put into service 115 new diesel units. He said the company aimed at complete dieselization by 1961. Also, 4,000 freight cars were added to the road's equipment roster in 1956.

The past year marked the completion of an important phase of the Canadian National's dieselization plans, Donald Gordon, chairman and president, said in his year-end statement.

A five-year plan initiated in 1952 was based on dieselization of those specific services which would yield the greatest return on the investment made. The $220 millions spent thus far, he added, have resulted in the substantial economies anticipated.

A new phase, already introduced, contemplates further development of the dieselization program on a territorial basis beginning at the eastern and western extremities of the railway.

"Our year-end figures will show that more than $95 millions were invested in cars and locomotives in 1956," Mr. Gordon said. "This represents a substantial net addition to our rolling stock in order to carry the produce of an expanding economy.

"By year's end, deliveries of new rolling stock included 324 diesel locomotive units and 4,633 freight cars. Two new cars were introduced for specialized traffic and are now under test. These are a pulpwood car which increases normal carrying capacity by 70%, and a double decked automobile transporter that can load eight standard-sized automobiles in contrast with the normal complement of four. A third car, also at the testing stage, is an all-purpose box car. By means of hinged and sliding wall panels the door openings can be increased from 5 ft 8 in. to 15½ ft. Our aim is to make it easier to load and stow freight and also to convert the car quickly, when required, into a bulk carrier for grain."

Orders were placed for 6,110 freight cars and 130 air-dump work cars, Mr. Gordon said, and experiments with motive power were continued. "This summer we tested a diesel locomotive equipped with hydraulic transmission instead of the customary electrical transmission. It is now in western Canada where it will be observed for winter performances."

A Giant Awakens

Resembling prehistoric monsters unearthed after a long sleep, three Santa Fe steam locomotives (Nos. 1035, 3167 and 4076), recently reappeared after a five-year "hibernation" in the bed of the Kaw river at Topeka, Kan. During the Kaw's disastrous 1951 flood, the locomotives were placed on the Santa Fe's river bridge as weights in an effort to save it. The bridge went down, however, and the locomotives went with it. After the river returned to normal, visible parts of the submerged units were removed to clear the channel. Now, after a long drought, their remains are exposed. Workmen in the photograph are salvaging drive wheels of No. 3167 in the shadow of the rebuilt bridge.

Rulings on Rail and Truck Rate Competition Reviewed

The Interstate Commerce Commission's Bureau of Transport Economics and Statistics has issued a survey of commission decisions dealing with adjustments in the relationships of rail and motor rates. The report, Statement No. 567, is a document of 266 mimeographed sheets which was issued "as information," not having been adopted by the commission.

About 400 decisions are reviewed. The period covered runs from 1920 to 1955. The decisions are presented generally in chronological order by periods and years, but an effort was made to keep discussions of related decisions together.

Fourth-section cases are treated in a separate section, as are cases pertaining to container-type rates and rates for "piggyback" services. The effect of motor competition on intrastate rail rates is also the subject of a special section. The study was prepared "primarily" by A. P. Bukovsky of the bureau's staff.

SP Trucking Company Buys Pacific Freight Lines

Pacific Motor Trucking Company, highway subsidiary of the Southern Pacific, has purchased Pacific Freight Lines.

The acquisition, authorized recently by the ICC, ends a temporary lease arrangement with the California and Arizona carrier in effect since September 1955.

(Continued on page 134)

ELECTRICAL DIVISION

LIGHTING DIVISION

THE HOWE SCALE COMPANY

SAFETY RAILWAY SERVICE CORPORATION

Constantly aware of the effort of railroad management to provide the best in modern service with the lowest possible operating cost . . . these divisions of SAFETY INDUSTRIES, INC. . . .

- Electrical Division
- Lighting Division
- The Howe Scale Company
- Safety Railway Service Corporation

pledge their research and manufacturing facilities . . . to a continuing program of product development and to the production of quality equipment, competitively priced . . . to meet the exacting requirements of the railroad industry and the long range objectives of railroad management.

ELECTRICAL DIVISION . . . manufacturers of all types of electrical equipment including air conditioning systems, for railroad rolling stock.

LIGHTING DIVISION . . . designers and manufacturers of lighting fixtures and luggage racks for railroad passenger cars and Infra-Red Ovens for repair shops.

THE HOWE SCALE COMPANY . . . producers of railway track scales . . . a complete line of both conventional and automatic industrial weighing and batching equipment . . . and the most modern hand, baggage and dragline trucks.

SAFETY RAILWAY SERVICE CORPORATION . . . provides preventive maintenance on railroad passenger cars and also a repair service for "Safety" equipment.

SAFETY INDUSTRIES, INC.

FORMERLY THE SAFETY CAR HEATING AND LIGHTING COMPANY, INC.

P. O. BOX 904 NEW HAVEN 4, CONNECTICUT

(Continued from page 132)

The transaction covers highway operating rights, equipment and certain other physical properties.

Consolidation of operations has closed some gaps in PMT rights and permits broader and faster origin-to-destination service to shippers. It is a "continuation of SP's efforts to provide a complete land transportation service."

Almost 5,000 vehicles, including 1,500 gained from PFL, are operated by PMT in six western states. PMT will continue to lease 13 PFL terminal properties in California.

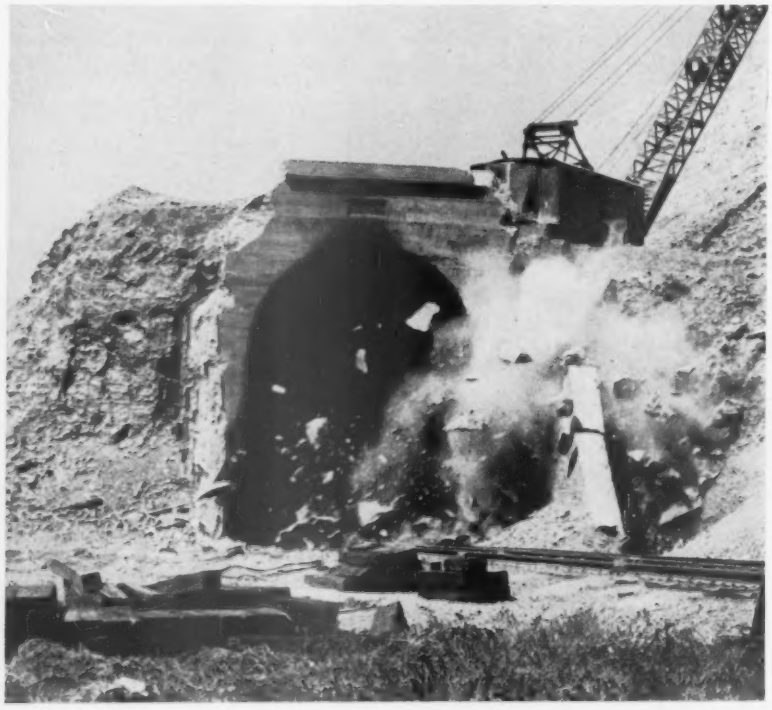
EMD Deliveries and Exports Grow

Domestic locomotive deliveries of the Electro-Motive Division of General Motors during 1956 were approximately 50% greater than total deliveries in the preceding year, according to Nelson C. Dezendorf, general manager of the division.

"The export locomotive business, handled through General Motors Overseas Operations Division, continued to grow during 1956, with unit sales about 60% greater than in 1955," he said. "The eventual world market for diesel locomotives potentially is much greater than the domestic locomotive market has been. We now are producing locomotives for export at the rate of about two per working day."

Mr. Dezendorf said one of the newer facets of Electro-Motive's business — locomotive remanufacture — continued to expand during the past year. Volume of locomotive and component remanufacture increased almost 70% over 1955.

EMD now has more than 11,000 employees, Mr. Dezendorf said, and contemplates adding about 2,000 more in 1957. He disclosed that expanding markets "have necessitated the start of a 42% addition to our manufacturing space at the main plant in La Grange."



Sudden Change on the Southern Pacific

Passengers on Southern Pacific's Coast Line recently found something missing from the tracks near Sudden, Cal. A new cut made an old tunnel obsolete —and the SP removed the exposed tunnel walls and ceiling, section by section, between trains. The illustration shows a blast which demolished a thick portal which stood at one end of the tunnel.

October Accidents

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of railroad accidents for October 1956 and last year's first 10 months. The compilation, subject to revision, follows:

Item	Month of October		10 months ended with October	
	1956	1955	1956	1955
Number of train accidents*	783	776	7,815	7,095
Number of accidents resulting in casualties	57	43	435	393
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	69	76	677	694
Injured	68	76	755	696
Passengers on trains:				
(a) In train accidents*				
Killed	..	..	43	4
Injured	..	46	957	398
(b) In train-service accidents				
Killed	..	3	6	11
Injured	130	135	1,396	1,445
Travelers not on trains:				
Killed	1	..	3	4
Injured	62	67	678	682
Employees on duty:				
Killed	32	22	199	200
Injured	1,680	1,676	15,675	14,912
All other nontrespassers:**				
Killed	140	160	1,105	1,156
Injured	454	519	4,119	4,274
Total — All classes of persons:				
Killed	242	261	2,033	2,069
Injured	2,394	2,519	23,580	22,407

*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of $375 or more to railway property. Only a minor part of the total accidents result in casualties to persons, as noted above.

**Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers*, were as follows:

Persons:				
Killed	123	136	1,034	1,048
Injured	308	366	2,871	2,899

Wilson Quits Commerce Department Position

Thomas B. Wilson has resigned as deputy under secretary of commerce for transportation. He will become chairman of the board of Johnson Motor Lines of Charlotte, N. C.

Mr. Wilson had been with the Commerce Department since 1955. He is a former officer of the Southern Pacific, for which he organized the Southern Pacific Motor Transportation Company in 1927. He has also held the presidency of Pacific Greyhound Lines and executive positions with steamship companies and air lines.

Kiernan Joins Staff Of American University

Lloyd J. Kiernan, retired executive vice-president of the Boston & Maine, is director of the Ninth Institute of

(Continued on page 136)

Rolled wheel being removed from the rolling mill.

Final stage in heat treating.

Modern manufacturing methods and equipment insure the dependable high quality of

Careful inspection to AAR Standards.

Edgewater Rolled Steel wheels

A unique production process gives Edgewater Wheels the homogeneous steel structure so important to long service. Advanced metallurgical techniques are applied at every step, from producing the steel in our own furnaces through forging, rolling and machining.

The world's most powerful wheel rolling mill starts with a hot forged block and expands the wheel rim to size, forming the flange without reheating. This continuous, mechanical rolling action results in a uniform, fine grain structure—with more mileage from every Edgewater Wheel.

Edgewater Steel Company

P. O. Box 478
PITTSBURGH 30, PENNA.

(Continued from page 134)
Industrial Transportation and Traffic Management at the American University, Washington, D. C. The institute is being conducted from January 8 through January 25.

Since retiring from the B&M, Mr. Kiernan has served as consultant to the Association of American Railroads, the U. S. government, and the governments of Chile and Spain. In 1953, he was secretary general of the Eighth Pan American Railway Congress, which was held in Washington.

Sale of StJ&LC to Be Opposed

A legal battle in which the Maine Central, the Rutland, the Railway Labor Executives Association and state officials of Vermont will cooperate to prevent sale of the St. Johnsbury & Lamoille County to New York City interests, will open in Montpelier, Vt., at a public hearing before an Interstate Commerce Commission examiner on January 22.

Many individual New England shippers are expected to join the organized opposition, which seeks to prevent the sale of the 96-mile railroad that runs from St. Johnsbury, Vt., to Swanton.

The St. Johnsbury & Lamoille County at present forms a connecting link which provides northern New England shippers with an alternate route to New York and Pennsylvania cities, and an alternate low-cost route for freight to the Middle West. In addition, it serves directly about a dozen communities in the state of Vermont.

Opponents of the proposed sale said they are determined to fight any move which might prove to be a first step towards deterioration of service and abandonment of all or part of the line.

Examiners Recommend IC Fare Hike

Illinois and Interstate Commerce Commission examiners have recommended that the Illinois Central be granted a 20% increase in suburban passenger fares and a 15% increase in minimum one-way fares within Chicago.

The IC had asked for a flat 36% increase to offset increased costs and to provide a 3.2% return on suburban investment.

The examiners recommended that IC fares be increased from 22 to 25 cents for the minimum one way fare, with comparable percentage increases on multiple ride tickets.

Meanwhile, Jersey Central Lines filed with the ICC tariffs for increased interstate commutation fares to become effective on next January 27.

The largest fare increase sought by the railroad is $3 a month—for "unlimited" monthly commutation tickets good for any number of rides seven days a week. "Standard" monthly tickets, good for any number of rides Mondays through Fridays, would go up $2.70, and weekly tickets 75 cents. These increases would apply to distances of 14 miles or more; for shorter distances, fares would be increased to a lesser extent.

At the same time, the Jersey Central also asked the ICC to adjust intrastate commutation fares in order that the existing monthly $1.50 differential between intrastate fares be continued.

Tardy RRs Must Wait for Fare Hikes

The 17 eastern railroads which were late petitioners in the passenger-fare case were not permitted by the Interstate Commerce Commission to raise their fares January 9, as did the eight original petitioners.

The latter increased their coach and first-class fares 5%, and the 17 late comers propose to go along on that basis.

The ICC ignored the 17-road request for permission to file short-notice tariffs with the January 9 effective date when it fixed January 23 as the deadline for filing protests against their petition. The increases made effective by the eight original petitioners were authorized by the commission in an interim report on the petition they filed sometime ago (Railway Age, Jan. 7, p. 14).

The eight roads are New York Central, Pennsylvania, Chesapeake & Ohio, Lehigh Valley, Norfolk & Western, Pennsylvania-Reading Seashore, Pittsburgh & Lake Erie, and Reading. The commission's interim report left pending the plea of six of them for authority to make the first-class increase a 45% hike. LV and Reading are the two not parties to the 45% proposal.

The 17 late comers are the other eastern roads, except the New England lines.

NP Improvement Company To Be Liquidated

The Northwestern Improvement Company, wholly owned subsidiary of the Northern Pacific, is being dissolved. The company handled operation of NP coal properties in Washington and Montana.

Gradual liquidation over three years will simplify the railroad's corporate structure and improve assets, NP President Robert S. Macfarlane said. Total current assets of the subsidiary are $11,800,000. Liabilities are placed at $1 million.

Faricy Heads Railroad Committee for Inaugural

William T. Faricy, president of the Association of American Railroads, is chairman of the Eisenhower Inaugural's Railroad Committee.

That committee has distributed posters to be displayed in railroad stations throughout the country, inviting people to come to Washington for the inaugural on January 21.

Arrangements will be made to provide sleeping accommodations for thousands in railroad sleeping cars parked at four locations in the Washington area. The cars will be located at Eckington yards, Jersey yards at South Capitol and Eye streets, S.E., Fourteenth Street yards at Fourteenth and D streets, S.W., and Benning yards at Minnesota avenue and B street, S.E.

'Flash Report' Gives C&O Operating Results Jan. 2

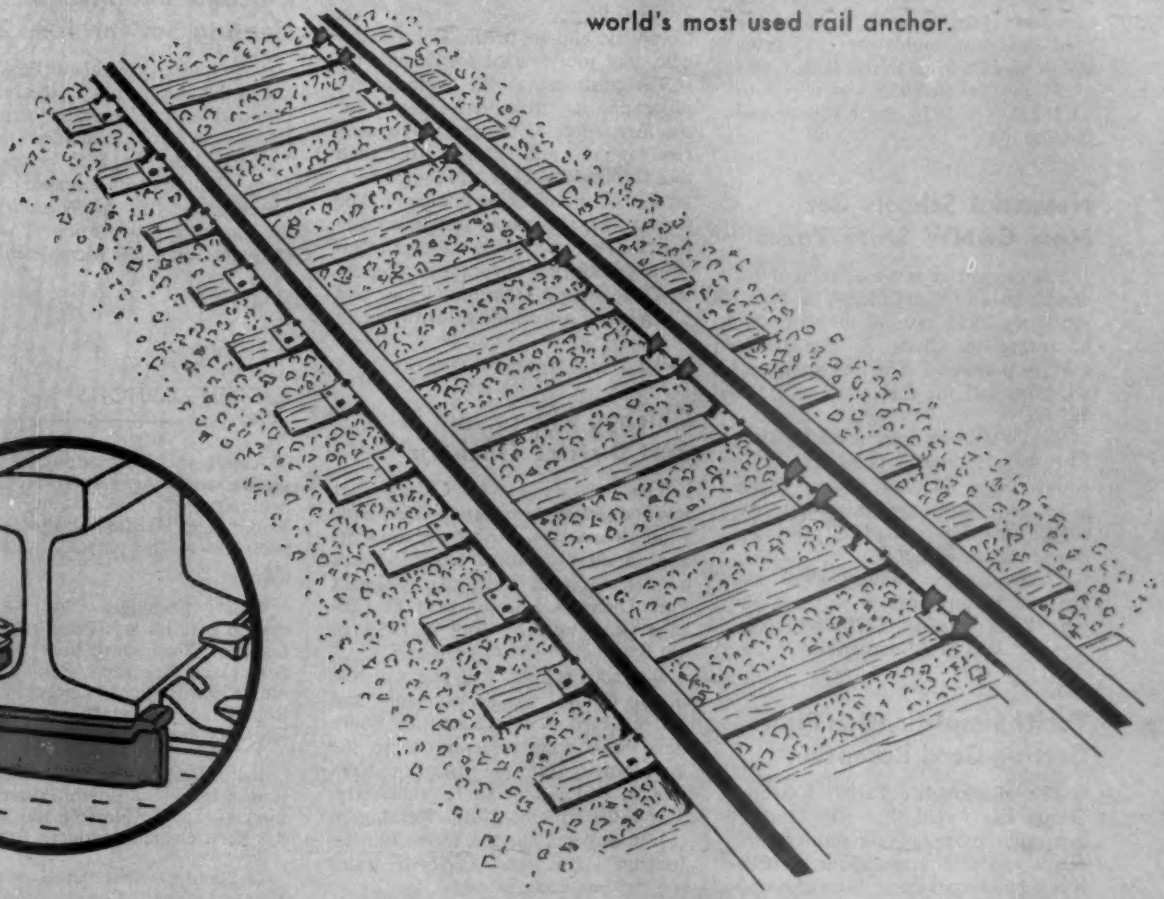
"Chessie," Chesapeake & Ohio's kitten, who usually slumbers peacefully throughout the year, was wide awake on January 2 to present the railroad's first "Flash Annual Report."

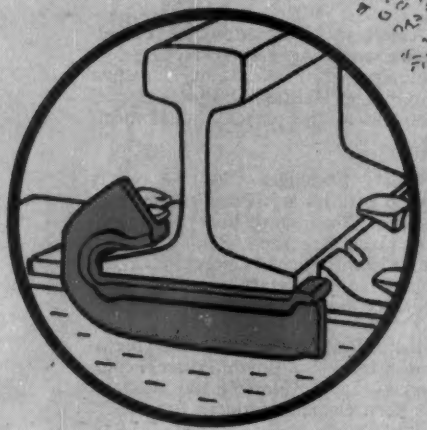
Final 1956 figures were added to a pre-printed shareowners report immediately after they became available from the railroad's finance department. Financial information contained in the "Flash" normally is not furnished to shareowners until the railroad's annual report is issued, generally in March. Through special effort, however, C&O's operating results are now made ready on the first working day after the end of each month, and yearly results on the first working day of the new year.

(Continued on page 138)

Be "FAIR" minded when purchasing Rail Anchors

You are more than fair to yourself and your company in ordering Fair Anchors, because they are not only always dependable and efficient, but they are also the world's most used rail anchor.





THE P. & M. CO.

CHICAGO • NEW YORK • DENVER • ST. LOUIS • BOSTON • ST. PAUL • WASHINGTON • SAN FRANCISCO • MEXICO CITY

(Continued from page 136)

The railroad's regular annual report will be issued at the end of January.

The "Flash" showed record C&O earnings accompanied by record expenditures for expansion and improvement in 1956. Capital expenditures of over $90 million were made last year. The report forecasts expenditures of $125 million for 1957.

NP Gas-Oil Holdings Seen Grossing $5 Million in '57

The Northern Pacific's oil and gas land holdings should gross approximately $5 million in 1957, NP President Robert S. Macfarlane predicts.

Prospective developments of the road's properties in Montana, Wyoming and North Dakota, where the road has extensive fee lands and mineral reservations, should be the source of the added income, he said.

Eighty new wells opened in 1956, supplemented by stepped-up production from existing wells, enabled the road to almost double the 1955 gross last year, Mr. Macfarlane said. Gross of $1,686,000 in 1955 was upped to $3,212,000 in 1956, the NP president pointed out.

Nebraska Schools Get Most C&NW State Taxes

School district taxes accounted for almost half of the Chicago & North Western's 1956 tax bill in Nebraska, according to Clyde J. Fitzpatrick, C&NW president. The railroad's total 1956 tax bill for that state is $314,511.60.

School district taxes accounted for $149,495.43; state taxes, $69,729; county taxes, $43,764; city or village taxes, $40,187; township, sanitary, road, cemetery, and fire protective district taxes, $11,064.

"Although the railway owns and operates no airplanes, it will pay airport taxes totaling $270.61 in Nebraska," said Mr. Fitzpatrick.

Tariff Simplification Plan Getting Good Reception

The Railroads' Tariff Research Group has found that tariff makers generally are complying with requirements and recommendations of bulletins it has issued since its tariff-simplification work got under way in 1952.

The group's first report on compliance was issued recently by its acting chairman, Edward V. Grosvenor. It is a document of 15 mimeographed sheets, single spaced. Interested persons may obtain copies from Mr. Grosvenor, Transportation Building, Washington 6, D.C.

The report shows that, as to 63 of the improvement bulletins, compliance by tariff makers has been "very good or better." As to eight, compliance is "good or fairly good," while the showing as to nine of the bulletins was "not satisfactory." As to 26, compliance is "only fair or not yet measurable because of the short time the specifications have been in effect."

Where compliance has been unsatisfactory, studies have been ordered by the joint committee of railroad traffic officers and National Industrial Traffic League which supervises the group's activities.

T&P-Forwarder Tie Investigated by ICC

The Interstate Commerce Commission has instituted an investigation of contractual arrangements between the Texas & Pacific Motor Transportation Company, affiliate of the Texas & Pacific, and four freight forwarders.

The contracts, as the commission's order put it, cover performance for the forwarders of transportation services "at rates and charges other than those provided in the applicable tariffs" of the trucking company. The forwarders, also made respondents in the case, are Acme Fast Freight, National Carloading Corporation, Republic Carloading & Distributing Co., and Universal Carloading & Distributing Co.

Chicago RRs to Join in Port District Trackage

The Belt Railway of Chicago has notified the Interstate Commerce Commission it wants to withdraw its application to build a separate track connection with the Lake Calumet Port District's railway yard at Chicago (Railway Age, July 2, 1956, p. 40).

Instead, the BRC will join with the Illinois Central, the Pennsylvania, and the Chicago South Shore & South Bend in seeking an entrance to the Port District from the line of the Kensington & Eastern, an IC subsidiary. The K&E stretches from Kensington (115th Street, Chicago), to the Illinois-Indiana state line. CSS&SB trains use the line under contract.

The proposed spur would leave the K&E near the Calumet river and curve beneath the 130th Street highway bridge to the Calumet Harbor Terminal property.

The Pennsylvania acquired the Calumet Harbor Terminal property last month for $1.3 million.

UAL President Predicts Air Fare Increases

Rising costs of labor and materials may soon force an increase in air passenger and freight fares, according to W. A. Patterson, United Air Lines president.

Mr. Patterson said it is doubtful how much longer his company can hold fares at 1940 levels, notwithstanding record-breaking 1956 operations and even greater predictions for 1957. He said United expected an increase of 8% to 12% in revenue passenger-miles during the coming year and from 5% to 10% in freight ton-miles.

During 1956 the airline flew an estimated 4,565,000,000 passenger-miles and 51,300,000 ton-miles.

Chicago Demurrage Hearing Set for Jan. 25

The Chicago (Highland Park) hearing in the case involving the railroads' proposal to increase demurrage charges is now scheduled to open January 25. The ICC postponed it from January 7 because hearing opened that day in Washington on the Ex Parte 206 petition of southern railroads for a 7% increase in freight rates.

Organizations

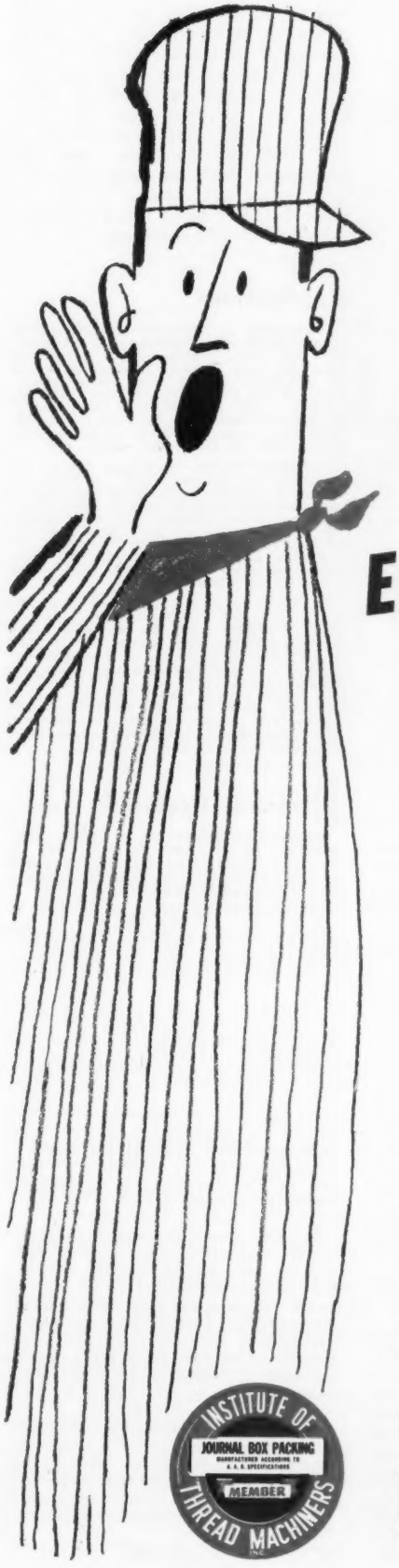
American Association of Traveling Passenger Agents.—J. H. Gazeley, general agent of steamships, Canadian National, at Halifax, N.S., was elected president at the recent annual meeting.

Dallas Passenger Club. — Newly elected officers are: President, Roy L. Lassiter, Burlington; first vice-president, Jack Brackeen, Santa Fe; second vice-president, George Ramsay, Rock Island; secretary-treasurer, R. C. Snider, Canadian Pacific.

Knoxville Traffic and Transportation Club.—S. Boyd Potter, commercial agent, Norfolk & Western, has been elected president for 1957.

Oakland Traffic Club. — Officers for 1957 are: President, Allen H. Penttila, Pacific Coast traffic manager, Sherwin Williams Company; vice-president, Lou F. Agnew, district freight agent, Luckenbach Steamship Company; secretary, Richard D.

(Continued on page 140)



Proved Service and Economy versus Expensive Substitutes

Simple Arithmetic

2,000,000	Freight cars packed with unproved substitutes such as pads, etc. @ an average price of $50.00 per car set.	$100,000,000.
2,000,000	Freight cars packed with approved A. A. R. Journal Box Packing @ approximately $4.90 per car set.	$ 9,800,000.
	Difference in savings to Railroads.	$ 90,200,000.

This is real economy.

There is no economical replacement for A.A.R. Approved Journal Box Packing.

Think this over and avoid being stampeded into exorbitant expense for unproved gadgets.

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141 East 44th Street, New York 17, New York

Atlas Processing Corp., New York, N. Y.
Meyer Burstein & Sons, Neenah, Wisconsin
Dallas Waste Mills, Dallas, Texas
The J. Milton Hagy Waste Works, Philadelphia, Pa.
John J. McGrath, Inc., Philadelphia, Pa.
Miller Waste Mills, Inc., Winona, Minn.
National Waste Company, New York, N. Y.
O'Neill Brothers, Inc., Philadelphia, Pa.
The Pittsburgh Waste Co., Inc., Swissvale, Pa.
Riverside Mills, Augusta, Ga.
Royal Manufacturing Company, Perth Amboy, N.J.
Southland Manufacturing Co., Inc., Norfolk, Va.
Twin City Textile Mills Waste Co., St. Paul, Minn.

Organizations

(Continued from page 138)
Stokes, assistant traffic manager, Howard Terminal; treasurer, Dwight Yeaman, office manager, Haslett Warehouse Company.

Ohio Valley Transportation Advisory Board.—Newly elected officers for 1957 are: General chairman, C. W. Aller, traffic manager, Ohio Fuel Gas Company, Columbus; alternate general chairman, R. S. Thomas, traffic manager, American Laundry Machinery Company, Cincinnati; chairman, executive committee, R. W. Ernst, traffic manager, General Plywood Corporation, Louisville; vice-chairman, executive committee, Robert D. Tristram, traffic manager, Indianapolis Chamber of Commerce, Indianapolis; general secretary, L. H. Sickman, traffic manager, E. Kahn's Sons Company, Cincinnati.

Railroad Foreign Freight Agents' Association of Chicago.—New officers are: President, John J. Evich, foreign freight agent, Norfolk & Western; vice-president, G. J. Steinmiller, general foreign freight agent, Santa Fe; secretary, S. H. Garrod, foreign freight agent, Canadian Pacific; treasurer, H. W. Larson, foreign freight agent, Southern Pacific.

San Francisco Region Chapter, Association of Interstate Commerce Commission Practitioners. — Hatch Morrison, district freight agent of the Rock Island, at Oakland, Cal., has been elected chairman for the coming year.

Southern and Southwestern Railway Club.—A. T. Miller has resigned as secretary and has been succeeded by D. Glenn Sudderth. Mr. Miller retired earlier this year as general superintendent of the Georgia Railroad—West Point Route.

Southern Association of Car Service Officers.—Will meet at the Palm Beach Biltmore Hotel, Palm Beach, Fla., January 23-24.

Traffic Club of New England.—Officers for 1957 are: President S. L. Whipple, Jr., president, Wiggin Terminals, Inc.; vice-presidents, W. J. Benninghof, freight representative, Pennsylvania; V. F. Harrigan, New England freight agent, Baltimore & Ohio; E. M. O'Connor, traffic manager, Alger Brothers, Inc.; and J. T. Sasso, district manager, Luckenbach Steamship Company; secretary-treasurer, G. J. Smith, district manager, Pacific Forwarding Association. A regular monthly meeting is scheduled for January 17 and the annual dinner, February 19, at the Hotel Statler, Boston.

Traffic Club of New York.—Newly elected officers for 1957 are: President, W. J. Honan, eastern freight traffic manager, Baltimore & Ohio; first vice-president, H. H. Huston, general traffic manager, American Can Company; second vice-president, E. J. Dean, assistant vice-president, Erie; secretary, G. H. Burtis, assistant traffic manager, Luckenbach Steamship Company; treasurer, A. H. Brown, traffic manager, St. Regis Paper Company.

Transportation Research Symposium.—This symposium, to be held February 27-28 at Purdue University, Lafayette, Ind., is designed to present the most recent results of management science research in its application to all phases of the transportation industry. Conducted by the Management Sciences Research Group of the university's Department of Industrial Management and Transportation, the symposium is intended to "emphasize and balance in presentation both the point of view of practical operations and the point of view of method or 'management science' innovation." It will be sponsored jointly by the Institute of Management Sciences, the Operations Research Society of America, and the American Institute of Industrial Engineers.

Financial

Spokane International. — *Acquisition by Union Pacific.*—Stating that these two roads have enjoyed "a natural community of interest" in a joint route from UP territory into Canada via the SI, the Interstate Commerce Commission has authorized the UP to acquire control of the Spokane. Control would be effected through issuance by the UP of 181,135 shares of $10 common stock in exchange for at least 80% of the outstanding SI stock.

The ICC noted the intervention in the proceedings by the Northern Pacific, Canadian Pacific, Great Northern, Milwaukee and Soo Line, as well as by shipper groups in opposition. The GN and NP sought joint control, if the status quo now in effect were not maintained, by the four trunk line roads connecting with the SI, with possible inclusion of the Canadian Pacific. The CPR sought exclusive control of the Spokane.

The commission, however, ruled that except in transcontinental traffic the UP and SI are not competitive, but complementary to each other, while the SI, GN and NP are competitors. The Spokane serves mainly as a bridge carrier, 58% of whose overhead business is interchanged with the UP.

The commission declared it would not be in the public interest to permit competing carriers to gain control of the Spokane, stating that the SI's status would inevitably deteriorate to that of an inferior carrier. It said the GN and NP "are not proper parties" to acquire the Spokane, while there was no surety that SI's stockholders would agree to ownership by the CPR. At the same time, the commission held, the Spokane's average annual net income should rise from $417,017 to as much as $550,000 through affiliation with the UP.

Applications

CHESAPEAKE & OHIO.—To assume liability for $4,200,000 of equipment trust certificates, third and final installment of a $21,000,000 issue, the whole of which is financing in part the acquisition of 100 diesel-electric locomotives and 994 freight cars (Railway Age, Oct. 1, 1956, p. 38). The certificates would mature in 15 annual installments, beginning October 23, 1957. They would be sold by competitive bids which would fix the interest rate.

MISSOURI PACIFIC.—To assume liability for $4,875,000 of equipment trust certificates to finance in part the acquisition of 800 gondola cars. The cars would be built in Missouri Pacific shops at an estimated unit cost of $7,775, the estimated total cost being $6,220,000. The certificates would mature in 15 annual installments, beginning January 15, 1958. They would be sold by competitive bids which would fix the interest rate.

READING.—To assume liability for $5,250,000 of equipment trust certificates, part of a proposed $7,800,000 issue, the whole of which would finance equipment expected to cost $10,019,600. The equipment, to be purchased from Bethlehem Steel Company, would include 400 gondola cars at $6,490 each, and 1,000 hopper cars (700 of them to contain some reconditioned parts), at $6,490 each. The certificates would mature in 30 semiannual installments beginning July 1, 1957. They would be sold by competitive bids which would fix the interest rate.

Dividends Declared

UNITED NEW JERSEY R.R. & CANAL.—$2.50, quarterly, payable April 10, 1957, July 10, October 10 and January 10, 1958, to holders of record March 20, 1957, June 20, September 20 and December 20, respectively.

WHEELING & LAKE ERIE.—common, $1.43 ¾, quarterly; 4% prior lien, $1, quarterly, both payable February 1 to holders of record January 11.

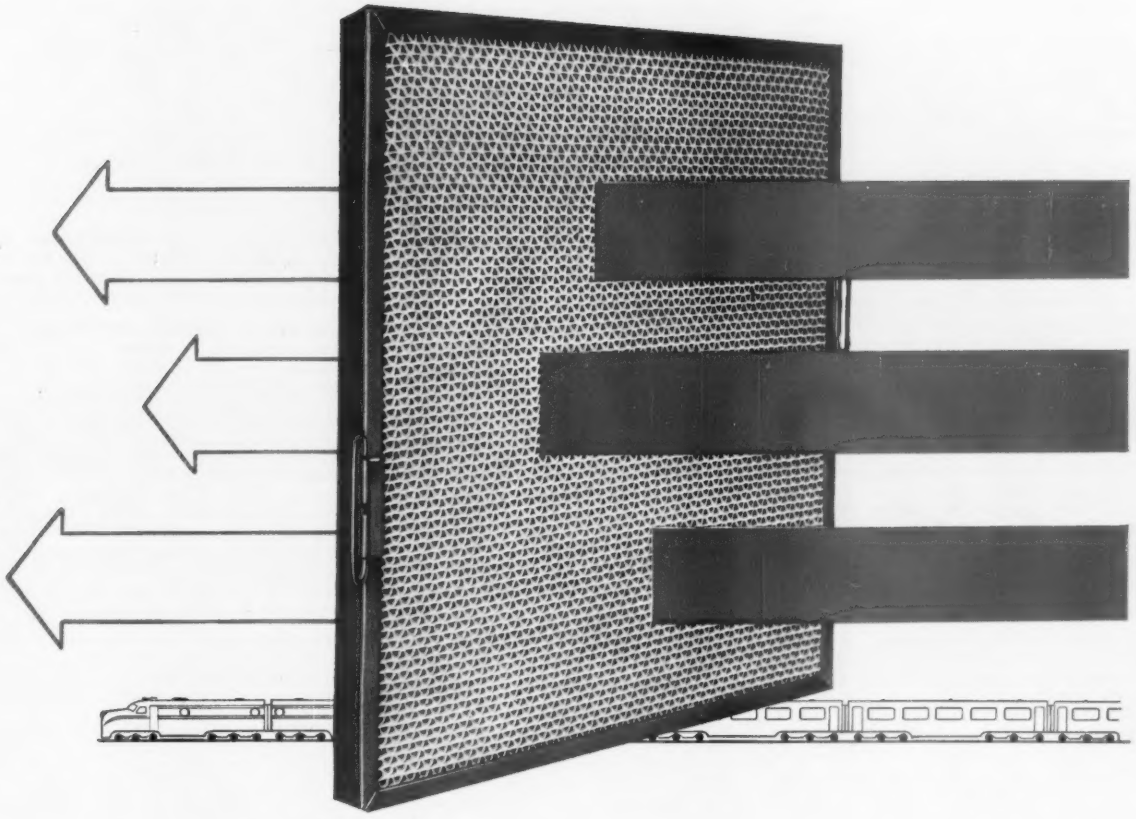
Supply Trade

Ground has been broken in Springfield, Ill., for a new fabricating plant for **Armco Drainage & Metal Products, Inc.** It will be on an eight-acre tract on East Linn avenue and will be four times larger than the present plant in Springfield.

Ex-Cell-O Corporation has acquired the **Cadillac Gage Company** of Roseville, Mich., and the **Smith Bearing Company,** Trenton, N.J., through exchange of stock. Both will operate as separate units under existing managements. Cadillac Gage produces a line of plug and ring gages and several special mechanisms, while Smith Bearing Company produces anti-friction needle bearings.

Ansonia Wire & Cable Co. has moved from Ansonia, Conn., to a new manufacturing plant in Ashton, R.I. **Ralph W. Engsberg** has joined the company as sales engineer. He was until recently western division manager for **Kellogg Switchboard & Supply Co.**

(Continued on page 142)



Cut maintenance, increase engine life with Esso AIRFIL® Coating Oil

Esso's new AIRFIL Coating Oil for diesel engine air filters has such great dirt pick-up qualities that it can substantially cut maintenance costs and increase engine life. This is possible because of the reduction in abrasive wear, lessening the need for replacements of engine parts. You, too, can profit from these benefits by using Esso AIRFIL Coating Oil in diesel air intake filters, and in air-conditioning filters.

Esso AIRFIL COATING OIL offers three important advantages:

1. Easy to apply... won't drip off. In liquid form when hot, it may be applied quickly in the desired quantity, while at normal temperatures, it is a gel-like solid that won't run off.

2. Superior wicking qualities mean a continually fresh surface is presented to the air. Successive layers of dust are rapidly wetted, keeping dirt-retaining efficiency at a maximum.

3. Insoluble in water . . . won't emulsify, and so resists removal by rain or snow, yet it can be removed quickly by hot detergent wash or steam blast.

Esso offers a complete line of dependable railroad products. Valuable years of experience in research and development, combined with continual testing on the road and in the lab, stand back of the outstanding performance of Esso Railroad products.

Esso

RAILROAD PRODUCTS

For data sheet regarding specifications of AIRFIL Coating Oil, write to Esso Standard Oil Company, Railroad Sales Division, 15 West 51st Street, New York 19, N. Y.

Supply Trade

(Continued from page 140)

Robert G. Schimp has been appointed wire and cable specialist for **General Electric** Construction Materials' northeastern district, at Syracuse, N.Y. He was formerly in the wire and cable department at Bridgeport, Conn.

W. H. Miner, Inc., has opened a new foreign operations office at 425 Thirteenth Street, N.W., Washington, D.C. **S. T. Mendez**, vice-president—foreign operations, will be in charge of foreign sales and operations except in Canada.

Standard Railway Equipment Manufacturing Company has acquired **John Gillon Company**, Cicero, Ill., which will be operated as a division of Standard.

The general offices of **Acme Steel Company** are now at 135th and Perry avenue, Chicago 27.

Air Reduction Sales Company, a division of **Air Reduction Company**, has acquired the assets and business of **Jackson Products, Inc.**, Detroit, manufacturers of welding electrode holders, welding helmets, safety goggles, and other welding supplies for electric arc welding.

General Telephone Corporation has announced formation of **General Telephone Laboratories, Inc.**, Chicago. The new organzation has acquired the research and development personnel and facilities of **Automatic Electric Company** and will begin an expanded program of basic research and product development in the telephone switching and related communication fields. **Robert M. Wopat**, Automatic Electric's vice-president, research and engineering, has been elected president of the new organization.

Evans Products Company has entered into an agreement with **Haskelite Manufacturing Corporation** for the acquisition of substantially all assets of the latter company, which manufactures doors, door units and laminated wood products.

Louis T. Freed, assistant southwestern manager of **General Railway Signal Company** at St. Louis, has been appointed western manager at Chicago.

Thomas A. Edison, Inc., and **McGraw Electric Company** have merged to become one of the largest firms in the electrical industry under the name **McGraw-Edison Company.**

Mark C. Pope Associates, Atlanta sales representatives for **C & D Batteries, Inc.**, have added **Eugene L. Krauss** to the staff. He was formerly a district manager for the Storage Battery Division, **Thomas A. Edison, Inc.**

Frederick S. Ball, a director of **Franklin Balmar Corporation**, has been elected president, succeeding **George A. Alcock**, who has retired but remains as a director.

T. W. Krueger, assistant sales manager of **Duff-Norton Company**, has been promoted to sales manager of the jack division.

Valvoline Oil Company, division of **Ashland Oil & Refining Co.**, has named **Raymond C. Withrow**, New Brighton, Pa., as manager of rust preventive sales. **Taylor A. Hied** has succeeded him as manager of industrial lubricating oil and grease sales.

RCA Service Company has named managers for eight service regions who will be responsible for all field service and installation activities of the technical products department. They are: **B. D. Bachin**, eastern region, New York; **M. E. Wheaton**, mideast region, Philadelphia; **C. L. Swinney**, southeast region, Atlanta; **W. W. Gilreath**, southwest region, Dallas; **E. D. Van Duyne**, west central region, Kansas City; **F. W. Hamre**, central region, Chicago; **H. M. Madison**, western region, Hollywood, Cal.; **H. E. Frisbie**, east central region, Cleveland.

People in the News

AKRON, CANTON, & YOUNGSTOWN.—William J. Peel, Jr., appointed general agent, New York.

ANN ARBOR.—Robert L. Fehlber, chief of divisions bureau, **Wabash**, St. Louis, appointed acting freight traffic manager of the Ann Arbor at Toledo, Ohio, succeeding **E. P. McGahey**, retired.

ASSOCIATION OF WESTERN RAILWAYS.—Effective February 1, **Val Rice**, associate editor, Modern Railroads magazine, appointed assistant to director of public relations, AWR, Chicago.

ATLANTIC COAST LINE.—W. N. Downey, assistant engineer bridges, appointed engineer of bridges, Wilmington, N.C., succeeding **G. G. Thomas**, retired.

BOSTON & MAINE.—Richard Jackson, acting general counsel, appointed general counsel, Boston.

BRITISH & IRISH RAILWAYS.—George F. Luther, district passenger manager, Birmingham, England, appointed general traffic manager in North America at New York, succeeding **T. D. Slattery**, who retired January 1. **W. F. Spree**, assistant general traffic manager, appointed deputy traffic manager.

BURLINGTON.—Albert M. Rung, assistant to director of public relations, **Association of Western Railways**, Chicago, appointed special representative of the **Burlington** and the **Colorado & Southern**, Casper, Wyo.

E. F. Carroll, traveling freight agent, Boston, appointed general agent there, succeeding the late **C. L. Gaffney**.

CENTRAL OF GEORGIA.—Harry H. Morgan, general agent, Nashville, Tenn., retired December 31, 1956.

CHICAGO & EASTERN ILLINOIS.—Roy E. Ferguson, special assistant to vice-president, traffic, Evansville, Ind., retired after 50 years of service with the road.

CHICAGO GREAT WESTERN.—D. K. Lawson, personnel officer, Kansas City, Mo., appointed assistant to president—personnel. **G. E. Hanson**, assistant personnel officer, promoted to personnel officer, Kansas City.

CHICAGO & NORTH WESTERN.—Carl McGowan, attorney with the Chicago law firm of Ross and O'Keefe, appointed general counsel of the C&NW, effective January 1.

CHICAGO & WESTERN INDIANA-BELT OF CHICAGO.—John R. Ekholm, secretary and assistant treasurer, elected secretary and treasurer.

COTTON BELT.—G. W. Heuermann, assistant general freight agent, St. Louis, appointed to newly created position of freight traffic manager there. **C. H. Jacques**, general freight agent, St. Louis, appointed to newly created position of assistant freight traffic manager—rates at that point. **H. W. Mason**, assistant general freight agent, Tyler, Tex., appointed general freight agent—rates there. **R. F. Hovorka** named assistant general freight agent, St. Louis.

DELAWARE & HUDSON.—Matthew J. Hicks, assistant treasurer, elected secretary and treasurer at New York, succeeding **H. M. Irwin**, who will continue as a vice-president.

DENVER & RIO GRANDE WESTERN.—F. E. Long appointed general passenger agent, Denver. **R. P. Smith** appointed freight claim agent, Denver, succeeding **L. F. Dickinson**, retired. **E. F. Smith** succeeds **R. P. Smith** as assistant freight claim agent.

FRISCO.—J. H. Brown, division engineer, Ft. Worth, Tex., appointed assistant chief engineer of construction, and **O. E. Fort**, division engineer, Springfield, Mo., named chief engineer of maintenance, both at Springfield. **G. L. Harris**, division engineer, Southern division, Amory, Miss., named division engineer, Eastern division, North-South, Springfield. **G. E. Warfel** transferred from the Western division, Enid, Okla. to succeed Mr. Harris, and in turn is replaced by **C. A. Peebles**, assistant division engineer, Ft. Scott, Kan. **R. E. Catlett**, assistant division engineer, Chaffee, Mo., appointed division engineer, Fort Worth.

R. A. Pearson and **R. A. Rorie, Jr.**, named assistant superintendents, Springfield and Clinton subdivisions, Springfield, Mo., and Rolla and Lebanon subdivisions, Newburg, Mo., respectively. **J. M. Godfrey** appointed trainmaster, Eastern division, Springfield.

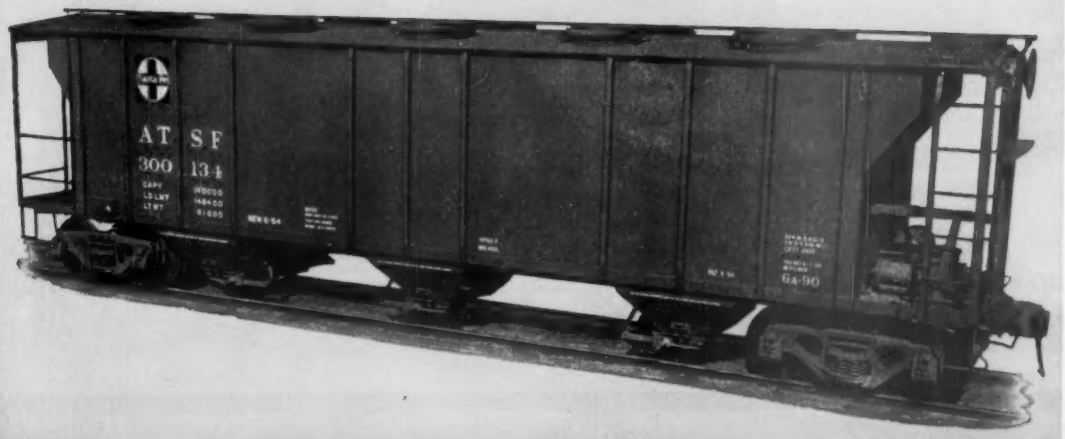
(Continued on page 148)

Carl McGowan
C&NW

Matthew J. Hicks
D&H

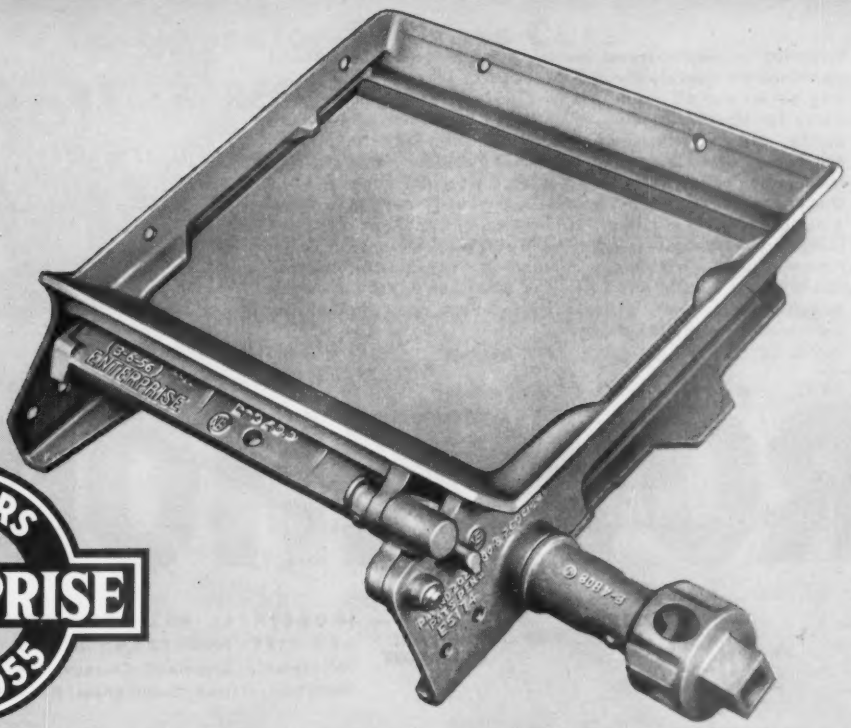
W. G. Whitsett
L&N

J. R. Parsons, Sr.
L&N



ENTERPRISE

Patented Outlets for Covered Hopper Cars



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ENTERPRISE
1905–1955

ENTERPRISE RAILWAY EQUIPMENT COMPANY

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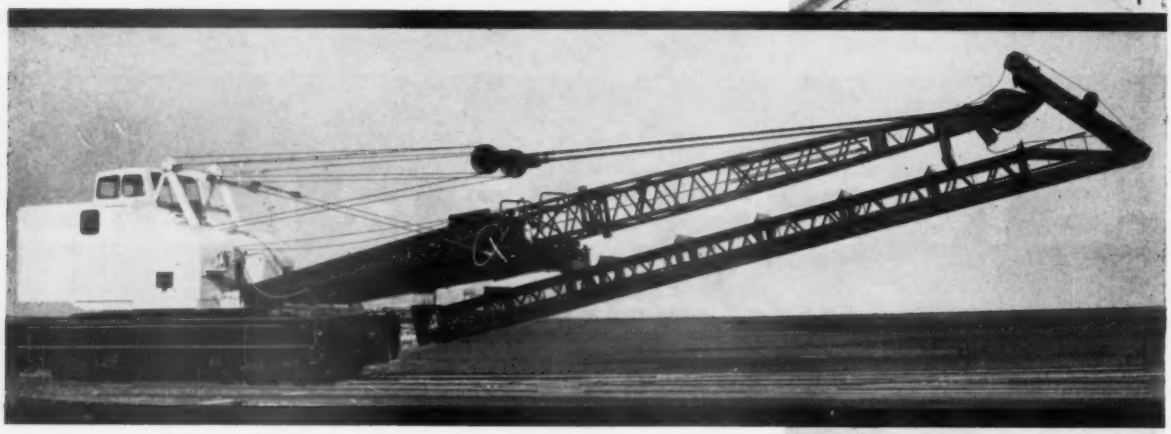
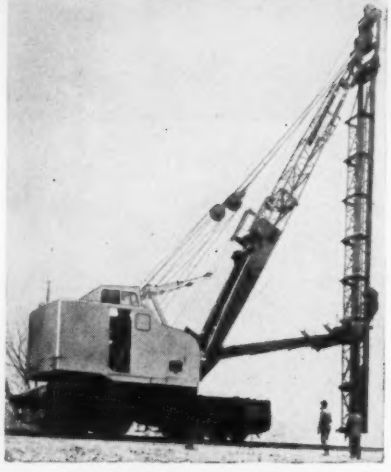
6312

LATEST TYPE BROWNHOIST DIESEL ELECTRIC PILE DRIVER AT WORK FOR AMERICA'S RAILROADS



BROWNHOIST DIESEL ELECTRIC PILE DRIVERS HAVE THE SPEED TO GET OFF MAIN LINES QUICKLY, AND THE LONG LEADERS AND FULL CIRCLE ROTATION TO WORK IN ANY POSITION

Propelled by electric travel motors, these Industrial Brownhoist machines are capable of road speeds up to 18 miles per hour . . . they get on and off main lines in a hurry. Strut and leaders fold away for travel, allowing full railroad clearance, and they're quickly and easily fastened in upright position for battering. The Brownhoist rotates in a full circle, and its leader reach of 28'6" from center of rotation gives it a wide working range. A large Diesel engine supplies the power for the heavy-duty Brownhoist machine. It has a maximum leader load of 26,000 pounds, and is equipped with power battering to sink piles as large or larger than that shown in the upper photograph. For further information about Diesel Electric Pile Drivers or other heavy-duty materials handling equipment, write today for your copy of the new Industrial Brownhoist catalog.



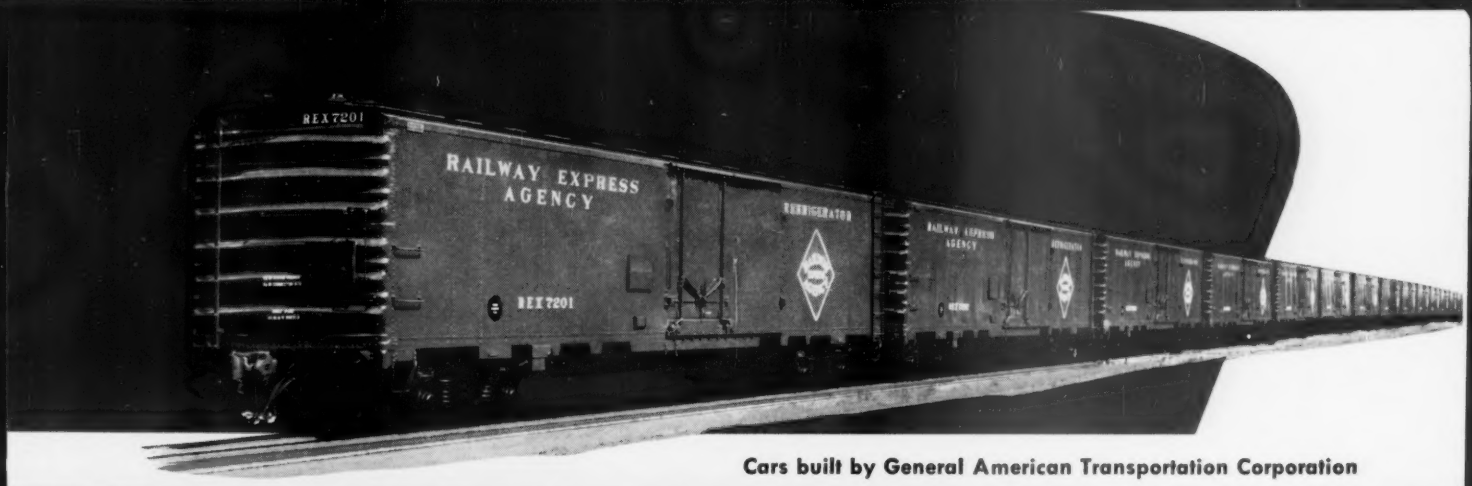
189

BROWNHOIST

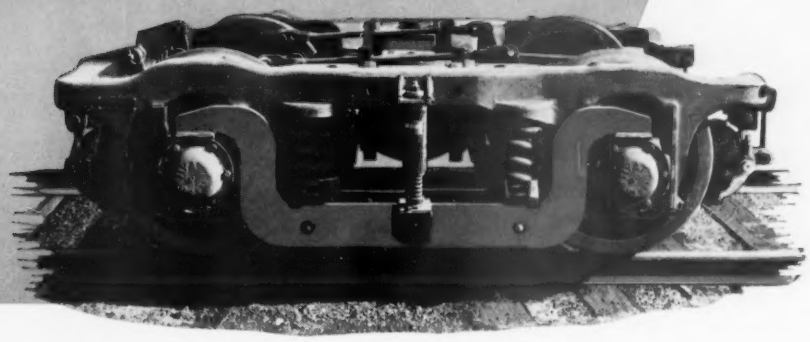
BROWNHOIST MATERIALS HANDLING EQUIPMENT GIVES A LIFT TO AMERICAN INDUSTRY

SUBSIDIARY OF Penn-Texas CORPORATION

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Cleveland, Chicago, San Francisco, Montreal
AGENCIES: Detroit, Birmingham, Houston



Cars built by General American Transportation Corporation



Commonwealth BX Truck

Here's Progress!

500 New Refrigerator-Express Cars for RAILWAY EXPRESS AGENCY Equipped with Commonwealth BX Type Trucks

Because of many years of outstanding performance of Commonwealth Trucks on cars of the Railway Express Agency and railroads throughout the country, this new lot is equipped with latest design Commonwealth BX Type Trucks. When not transporting perishables from the west coast and the south, these cars are used for LCL express shipments and bulk mail handling in fast train schedules.

Equalizers, swing bolsters, coil springs and friction snubbers combine to provide smooth, safe riding of light or loaded cars, protecting car contents, thereby minimizing damage claims. The rigid one-piece cast steel truck frames with integral cross transoms and pedestals insure axles being in tram at all times.

Commonwealth BX Trucks are approved for all types of Express-Refrigerator, Box-Express and Merchandise cars operating in all classes of passenger trains. For dependability and true economy be sure to specify Commonwealth Trucks.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

TRANSCONTROL CORPORATION

Announces

The Opening of Their Offices

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TRANSCONTROL is an organization of experienced engineers and designers. Transcontrol will engineer and furnish complete signal systems—especially C.T.C.

TRANSCONTROL is associated with and has exclusive sales rights for railway signal apparatus furnished by the following manufacturers:

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ACTIONCRAFT PRODUCTS, PORT WASHINGTON, N.Y.
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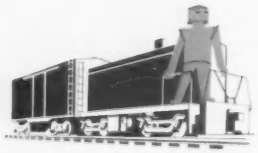
We can furnish the following items of railway signaling equipment:

C.T.C. control equipment
Track indicator equipment
Control machines
Signal transformers
Signal rectifiers
Instrument cases, houses and relay racks
Factory wiring
Rail contactors and wheel counters
Inductive devices
Inductive train communication
Mechanical apparatus such as: bridge couplers, rail braces, circuit controllers, rods and plates
Wire terminals and connectors
Plastic tags, name plates, etc.



"Watch for our Display Trailer."

John M. Pelikan, President

YOU TOO CAN SAVE MONEY WITH . . .

Lewis sealtite

RAILROAD FASTENERS

"ZINC BOLTS CUT COSTS"
We are hearing it more and more, "Zinc bolts save money." More railroads are using Sealtite Double-Life, Hot-Dipped, Sealed in Zinc, galvanized bolts. They add years of life, cut costs by retarding rust and corrosion. Ask about them.
SEALTITE TIMBER BOLT

More than 85 per cent of the nation's No. 1 railroads use Lewis Sealtite products—because the extra features save them money.

•

Each Sealtite bolt and nut is precision designed to do its particular job better. Every Sealtite product is hot forged from uniform special quality steel.

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All Sealtite products are made in the USA to meet or exceed ASTM specifications.

ILLINOIS CENTRAL

NORTHERN PACIFIC RAILWAY

THE MILWAUKEE ROAD

Santa Fe

A FEW OF THE MANY RAILROADS USING SEALTITE PRODUCTS

CENTRAL OF GEORGIA

GREAT NORTHERN RAILWAY

NEW YORK CENTRAL SYSTEM

OTHER FEATURES THAT SAVE YOU MONEY

FLUSH WITH SURFACE
Sealtite pulls up to a "level with surface" fit without counter sinking.

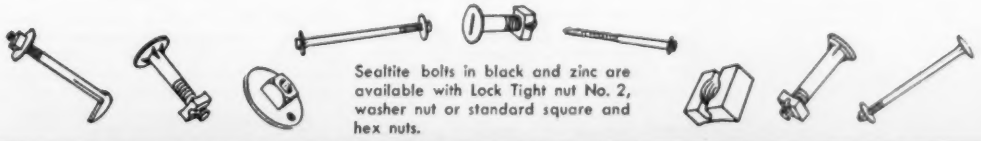
PERFECT FIT
Shank diameter thread to head is exact. No air pockets, no corrosion.

NO SPLINTERS
Sealtite scientific design compresses without raising surface splinters.

PATENTED FINS
For full bearing strength without tearing or splitting wood.

MOISTURE TIGHT
Sealtite tapered, beveled edge forms perfect water tight seal.

ACCURATE THREADING
A spinning fit on each bolt offers easy, fast installation.



Sealtite bolts in black and zinc are available with Lock Tight nut No. 2, washer nut or standard square and hex nuts.

Lewis BOLT & NUT COMPANY

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LOOK FOR THIS STAMP OF U QUALITY

(Continued from page 142)

FLORIDA EAST COAST. — **A. R. Austin,** commercial agent, Jacksonville, Fla., appointed division freight agent, West Palm Beach, succeeding **W. D. Brunson,** retired.

GRAND TRUNK WESTERN. — **Harold F. McAuley,** revenue accountant, appointed auditor, Detroit, Mich., succeeding **Charles DiMarco,** retired. **Lawrence C. Pleger,** disbursements accountant, named auditor of disbursements, and **Reid G. Robson,** machine method analyst, appointed auditor of revenues, both at Detroit. Mr. McAuley has also been named treasurer of the Detroit & Toledo Shore Line and the Detroit Terminal Railroad.

LEHIGH VALLEY.—**John H. Schmid,** assistant to general passenger agent, New York, appointed superintendent dining car service, Easton, Pa., succeeding **W. M. Sharp,** who retired December 31, 1956.

LOUISVILLE & NASHVILLE.—**W. G. Whitsett,** assistant to vice-president—traffic, Louisville, Ky., appointed an assistant to president there.

J. R. Parsons, Sr., assistant superintendent, Cumberland Valley division, Corbin, Ky., appointed superintendent of that division, to succeed **W. T. Cummins,** who retired January 1. **J. N. McClanahan,** trainmaster, Nashville, Tenn., named assistant superintendent, Cumberland Valley division at Corbin. **J. R. Parsons, Jr.,** assistant trainmaster, Evansville, Ind., appointed trainmaster at Birmingham, Ala. **Willard H. Thompson** named trainmaster, Birmingham division, at Nashville.

MINNEAPOLIS & ST. LOUIS.—**Richard Musenbrock,** general counsel, Minneapolis, Minn., elected vice-president—law.

NEW YORK CENTRAL.—**R. C. Marquis** and **J. M. Loconto** appointed assistant managers of transportation, New York.

G. M. Beischer, master mechanic, Collinwood, Ohio, appointed assistant mechanical superintendent, Western district, Cleveland, succeeding **E. H. Wright,** whose promotion to mechanical superintendent at New York was reported in Railway Age, Dec. 10, 1956, p. 42.

C. T. Gunsallus, assistant chief engineer—system, New York, appointed engineer of track—system, at that point.

Wayne M. Hoffman, assistant general attorney, Chicago, appointed to new position of assistant to vice-president—law, New York.

Beverly S. Converse, assistant engineer, system, appointed director of engineering, New York.

F. M. Ward appointed trainmaster, Electric-Harlem-Putnam division, Grand Central Terminal, New York.

NORTHERN PACIFIC.—**M. L. Harnden,** chief clerk in the general passenger department, appointed assistant general passenger agent, St. Paul, succeeding **C. J. Lindorfer,** who retired January 1.

Wayne M. Hoffman
NYC

Beverly S. Converse
NYC

PENNSYLVANIA.—**Harry J. McNally,** assistant regional engineer, New York region, promoted to regional engineer succeeding **Carl E. Gipe,** named engineer of operating agreements, office of system chief engineer, Philadelphia.

W. J. Madden, assistant electrical engineer, Philadelphia, retired December 31, 1956, after more than 45 years' service with the PRR.

Carl E. Anderson, agent at Frankfort, Ind., appointed to the new post of supervisory agent to handle all matters of operation, service and maintenance on the 57-mile Shelbyville branch—Columbus, Ind., to Bentonville. In addition to performing the agent's normal duties of soliciting business, Mr. Anderson will have jurisdiction over train service, car supply, track maintenance and equipment.

Dr. F. M. Swain appointed staff geologist, Philadelphia. Dr. Swain was formerly a member of the faculty of the University of Minnesota.

RAILWAY EXPRESS AGENCY. — **M. S. Cogan,** general manager, New York City divisions, New York, has exchanged positions with **G. C. Lace,** assistant vice-president, Eastern Region, Chicago.

READING.—**Charles Steindl,** stationery storekeeper, Reading, Pa., named stationer, Philadelphia, succeeding **Vincent I. Erb,** retired.

Derwin F. Steimling, chief marine engineer, Port Richmond and Port Reading terminals, appointed assistant manager, Port Richmond terminal, Philadelphia.

RICHMOND, FREDERICKSBURG & POTOMAC.—**Hartwell T. Rainey, Jr.,** chief car inspector, Richmond, Va., promoted to superintendent car department.

Leland L. Miller, general auditor, Richmond, elected comptroller. **Josiah A. Stanley, Jr.,** special accountant, succeeds Mr. Miller as general auditor.

Nelson S. DeMuth appointed assistant freight traffic manager—rates and divisions. **Carnegie B. Hamersly** and **James R. Holladay, Jr.,** named assistant freight traffic managers—sales, and **Eugene B. Luck** appointed assistant passenger traffic manager—sales, all at Richmond. **Louie C. Casey** and **Frank J. Eigenbauer,** general agents, appointed division freight agents at Atlanta and Richmond, respectively.

SEABOARD. — **C. H. Lineberger,** superintendent, South Florida division, Tampa, Fla., transferred to the Georgia division, Atlanta, Ga., succeeding **John White,** who died December 9, 1956. **William J. Winfree,** assistant superintendent, Georgia division, Atlanta, promoted to superintendent at Tampa, to succeed Mr. Lineberger. **B. C. High,** assistant superintendent, South Florida division, Mulberry, Fla., transferred to the Carolina division at Savannah, succeeding **Charles H. Cook,** transferred to the Georgia division at Atlanta. **R. L. Mott,** trainmaster, Jacksonville, succeeds Mr. High as assistant superintendent, South Florida division, at Mulberry.

SOO LINE.—**William C. Giese,** general freight agent, Minneapolis, appointed assistant general sales manager there, succeeding **R. F. Ronnan,** assistant freight traffic manager, who retired January 1. **C. O. Norwick,** assistant general freight agent, Menasha, Wis., named to succeed Mr. Giese as Western sales manager. **K. H. Peterson,** supervisor, Rail-Van Service, Minneapolis, replaces Mr. Norwick at Menasha as regional sales manager, and in turn is succeeded by **D. C. Simpson** (Railway Age, Dec. 10, 1956, p. 52). **E. E. Widmer,** general agent, Winnipeg, transferred to Minneapolis as regional sales manager, replacing **F. R. Crow,** general grain agent, promoted to freight service manager. **W. H. Hawes,** general agent, Detroit, retired January 1. **B. Hermanson** appointed district sales manager, Detroit, to succeed Mr. Hawes, and in turn is replaced by **R. E. Howard,** named district sales manager, Sault Ste. Marie, Mich. **W. H. Schenk** appointed district sales manager, Boston, Mass., replacing Mr. Howard. **A. O. Plunkett,** Eastern general freight agent, appointed Eastern sales manager, New York.

William J. Winfree
SAL

Frank L. Smith
Sou.

Harold F. McAuley
GTW

SOUTHERN.—**Frank L. Smith,** superintendent, Special Service, Washington, D.C., promoted to assistant vice-president at that point, succeeding the late **George T. Lane. C. Burch Farmer,** division special agent, Macon, Ga., succeeds Mr. Smith as superintendent, Special Service, at Washington.

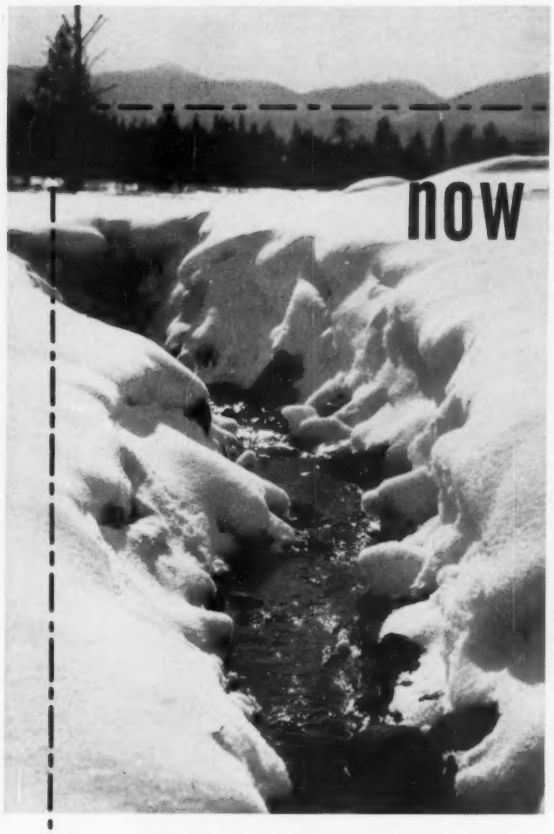
SOUTHERN PACIFIC.—**F. Wascoe** appointed manager, Bureau of Transportation Research, succeeding **E. C. Poole,** who retired December 31.

UNION PACIFIC.—**Leland J. Ziesmer,** freight traffic agent, Portland, **Nelson O. Albin, Jr.,** freight traffic agent, Spokane, and **Arnold W. Vershum,** appointed traffic agents, all at Portland. **Robert W. Swanson,** chief clerk, Spokane, named traffic agent there.

WESTERN PACIFIC.—**M. C. Madsen,** general foreman, communication department, Oroville, Cal., retired January 1, and position abolished. **J. W. Kendall,** general telephone and telegraph supervisor, San Francisco, appointed general supervisor of lines.

OBITUARY

William E. Callahan, 63, manager of the open car section, Car Service Division, **Association of American Railroads,** died January 1 at his home in Washington, D.C.



now track maintenance crews and section gangs can enjoy sparkling cool water wherever they are... thanks to IGLOO'S new CRYSTALINING*

A new sanitation advance, CRYSTALINING keeps water and other liquids pure, taste-free and crystal-clear.

**also available in Stainless Steel lined models*

IGLOO Heavy Duty or Stainless Steel water coolers, in 5 and 10 gallon sizes are just the ticket for railroads. They are extra strong to withstand rough treatment. IGLOO water coolers come in all sizes, insulated and non-insulated, with or without universal cup holder brackets.

RELY on these Igloo Extra-Value Features:

- Round Inside Bottom prevents accumulation of foreign matter—makes can easier to wash—stays sanitary.
- Recessed dripless spigot will not break off.
- 15% greater insulating qualities—less heat transfer because there is no metal-to-metal contact at bottom.
- Rugged construction proved by test. Igloo bottom survives weight of heavy bowling ball dropped repeatedly into bottom of can.

BETTIS CORPORATION

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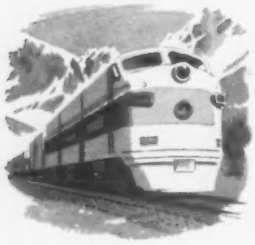
Being interviewed is H. A. Fuggiti, Acting Senior Development Engineer

"Here's where the heavy slugs of power come from"

At the Exide Laboratories — **Reporter:** Just exactly what part of the battery is that, Mr. Fuggiti?

Fuggiti: This is the Exide-Ironclad positive plate. And in any battery, power reserve is governed by positive plate area.



Reporter: Then do you mean that Exide-Ironclad Batteries have *more* positive plate area?

Fuggiti: Exactly. You can see that here. The cylindrical power tubes are arranged in a row. So the semicircular sides give an effective plate area one-third more than the plate size.

Reporter: How does that increase power reserve?

Fuggiti: Because there's a bigger working surface of battery plate exposed to the electrolyte. Power response is faster.

Reporter: What does this mean in battery performance?

Fuggiti: It means the battery can provide power to spare for peak power loads as well as a dependable source for continuous loads.

Reporter: Obviously this is an important feature of the Exide-Ironclad Batteries.

Fuggiti: Yes it is, but it's just one of many engineering details that contribute to their long life and high capacity.

Note to battery users: Whenever you order heavy duty batteries or the equipment that requires them, be sure to specify Exide-Ironclad. For detailed bulletin, write Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY Exide®

NOW ... one reliable source of supply to fill your needs in two departments

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More than 1700 items. Equipment and Accessories. Railroad-Highway Crossing Signals and Safety Devices. Movable Bridge Accessories.

Maintenance-of-Way and Structures
Formerly made by BUDA
Jacks: 9 Types, 119 Models, 3 to 100 tons. Rail Benders. Bumping Posts and Car Stops. Rerailers. Track, Bonding Drills. Track Liners.

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WESTERN CANADA: Maintenance-of-Way only, T. S. Taylor Machinery Co., Ltd., Winnipeg 12, Man., and Simson-Maxwell, Ltd., Vancouver 5, B. C.

Current Publications

BOOKS

HANDBOOK OF AMERICAN RAILROADS, by Robert G. Lewis. Second edition. 251 pages, illustrations, maps. Simmons-Boardman Publishing Corporation, 30 Church street, New York 7. $3.95.

Sources of railroad statistics are many and varied. This book provides in handy, compact form a single source of facts and information on each of the 113 Class I line-haul railroads. For each of the roads Mr. Lewis, who is publisher of Railway Age, has provided a map, an illustration of a train or a typical railroad facility, herald (if the road uses one), a brief historical sketch, an equally brief biography of the chief officer, financial and operating statistics, latest equipment data, and statistics of general interest.

The bulk of the statistical data comes from the files of the Interstate Commerce Commission, and is augmented—particularly with respect to gross ton-miles per freight train-hour—by data published by the Association of American Railroads' Bureau of Railway Economics.

This handbook should have a place in the library, or on the desk, of the railroad man, those who sell to railroads, the industrial traffic manager, and the "railfan"—in fact, anyone interested in railroads, who does not have access to the complete ICC statistics, will find it a handy, useful reference tool.

•

TRAFFIC DEPARTMENT ORGANIZATION, by John H. Frederick. 142 pages, charts. Chilton Co., Chestnut and 56 sts., Philadelphia 39. $6.

In illustrating how the impact of the traffic department's action can be felt throughout all echelons of industry, Dr. Frederick, with the cooperation of leading traffic managers, has used case histories of large and small U. S. firms to show how their traffic problems are handled and millions of dollars saved each year. The functions of traffic management, how it fits into the organization, its responsibilities, the maintaining of centralized control, and the unification of scattered activities, are outlined in new perspective. Where needed, organization charts are included to show the line of responsibility as well as the distribution of duties and responsibilities. There is no rule definitely to assign traffic management a place in a company, but there is a tendency toward making it an important part of top management. The department organizations described in this book show how a few important companies in various industries are making best use of efficient traffic management.

•

POLICY FORMATION IN RAILROAD FINANCE. Refinancing the Burlington, 1936-1945, by John Tettemer O'Neil. 234 pages, tables. Harvard University Press, Cambridge, Mass. $4.50.

This investigation proposes to examine as a case history the chain of managerial decisions that evolved an adequate financial policy for the Chicago, Burlington & Quincy, which faced a major problem in refinancing $85 million Illinois Division mortgage bonds. Dr. O'Neil tells how the solution was reached "from the inside," as it were, because officers of the railroad made available to him the entire correspondence, minutes, and other corporate records dealing with the refinancing operation; moreover, he interviewed the officers directly concerned. The reader can follow in detail the steps taken by management, the relationship between management and its financial advisers, and the creation of a successful plan to develop a simple capital structure for the railroad.

•

THE AMERICAN RAILROAD NETWORK, 1861-1890, by George Rogers Taylor and Irene D. Neu. 113 pages, maps. Harvard University Press, Cambridge, Mass. $3.75.

This volume grew out of the realization that railroad maps available for the pre-Civil War years present a

(Continued on page 154)

ONE word, availability, describes the main advantage that the diesel has over the steam locomotive. Available at the press of a button and for long, sustained hauls, with a minimum of on-the-road maintenance, the diesel has revitalized United States railroad transportation.

Porus-Krome, the porous Chromium, electroplated on the bores of a diesel's power cylinders, minimizes the wear factor that millions of ton or passenger miles represent. Porus-Krome, at the heart of the diesel's power, makes a substantial contribution to railroad economy.

● First in Electroplating, Research, Engineering, Production

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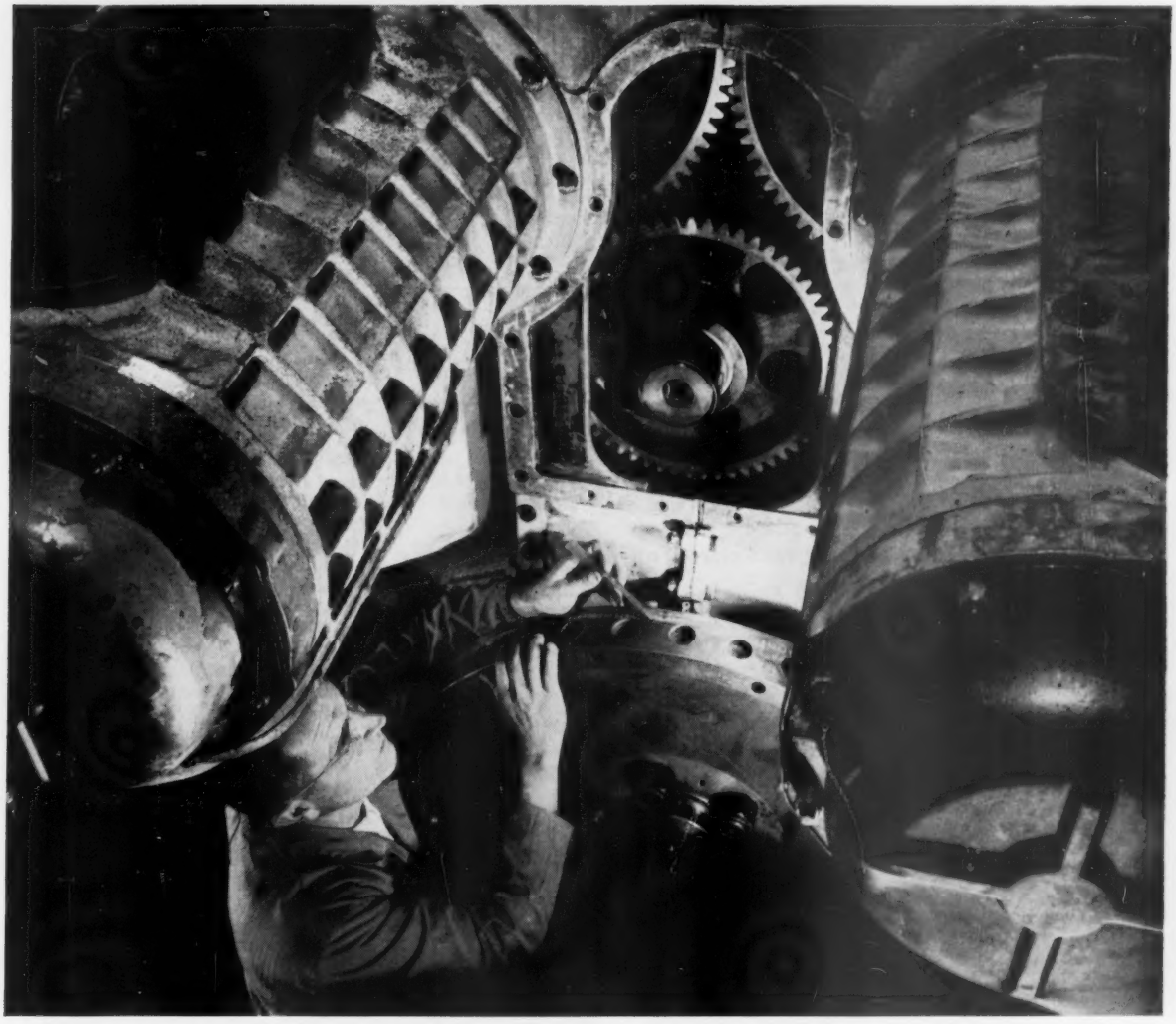
ENGINEER'S FIELD REPORT

PRODUCT RPM DELO OIL RR

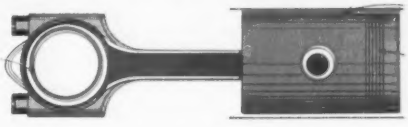
FIRM NORTHERN PACIFIC RAILWAY
South Tacoma, Wash.



RR diesel gears show only ½° wear in 2½ million miles

Timing gears on this Northern Pacific GMC-diesel locomotive engine, lubricated with RPM DELO Oil RR, recently completed 2½ million miles of severe freight service without repairs or adjustment. NP's South Tacoma Shop Foreman, A. R. Genin (above), indicates degree marks on engine flywheel, used to gauge gear wear. Tolerance between gear teeth shows variance of just ½° from original setting. Mr. Genin says, "We consider this low rate of wear remarkable for heavy-duty freight operation. It is typical of our experience during the 12 years we have used RPM DELO Oil in all our locomotive diesels." Engines are 1350 h.p. 16-567 series.

Why RPM DELO Oil RR reduces wear, corrosion



• Oil stays on engine parts—hot or cold, running or idle • Anti-oxidant resists lacquer formation • Detergent keeps parts clean • Special compounds prevent corrosion of bearing metals • Inhibitor resists foaming.

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THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey

STANDARD OIL COMPANY OF TEXAS, El Paso

THE CALIFORNIA COMPANY, Denver 1, Colorado

(Continued from page 152)

seriously misleading picture of the degree of physical integration of American railroads. The first task attempted was to construct a more meaningful map. When this was accomplished, questions immediately arose: Why the lack of integration of the American railroad net as late as 1861? When, by what means, and why did a unified network emerge in the following three decades? The first part of the book examines the railroad network of the United States and Canada as it existed on April 1, 1861. Large scale maps in color provide an accurate picture of the extent and location of American rail lines on the eve of the Civil War and show the track gage of each railroad. It is demonstrated that, contrary to common assumption, an integrated railway system was unknown in 1861, both because of the diversity of gages and the lack of connections among existing rail lines. The second part of the book describes the means by which the largely unconnected railroad network of 1861 became, during the next three decades, an actual "system," permitting free interchange of locomotives and cars, and allowing shipment of goods, without break of bulk, from one end of the country to the other. This part also includes some consideration of the reasons for the integration of the railroad system—an integration that was virtually complete by 1890—and a chapter on fast freight lines of the period.

•

FREIGHT CAR DISTRIBUTION AND CAR HANDLING IN THE UNITED STATES, by E. W. Coughlin. 338 pages. Association of American Railroads, Car Service Division, Transportation bldg., Washington 6, D.C. $2.40.

Ways and means of realizing more transportation service from the available supply of railroad freight cars are outlined in this book. In his foreword, Mr. Coughlin, manager of railroad relations of the Car Service Division, and who has had more than 40 years experience in the freight field, points out that "it is the aim of this volume to collect, present and discuss the good and the bad in car handling practices," giving at the same time the "reasons behind the various rules, regulations, reports and forms involved in freight car handling and distribution."

•

DIRECTORY OF RAILWAY OFFICIALS & YEAR BOOK, 1956-1957, compiled from official sources under the direction of the editor of the Railway Gazette. 526 pages. Tothill Press Limited, 33 Tothill st., Westminister, S.W.1, London. 40 shillings.

Among many changes in this year's edition, the outstanding one is the arrangement of all countries of the world (other than Great Britain and Ireland), in alphabetical order, regardless of their geographical or political grouping. For the first time since nationalization, information about the Indian Railways includes all the principal regional officers. More details are available concerning many other railways, particularly those of Argentina, Czechoslovakia, Jugoslavia and the U.S.S.R. The changes and extensions in the Middle East are worthy of note, particularly in Israel, Lebanon, Persia and Syria. Other organizations are shown in greater detail and there has been a general revision of the statistical sections. There is a general index and a personnel index.

PERIODICAL ARTICLES

THE GREAT U.S. FREIGHT CARTEL, by Gilbert Burck. Fortune, January 1957, pp. 102 et seq. Time Inc., 9 Rockefeller Plaza, New York 20. Single copies, $1.25.

Intercity freight transportation has contributed much to the growth of American productivity, but not as much as it could or should. Oil pipelines are specacularly efficient, but river and canal traffic has been heavily subsidized. More important, although railroad productivity (in terms of ton-miles per employee), is much greater than truck productivity, intercity trucks have been taking a rapidly growing share of the traffic, while railroads have been rapidly losing traffic. In other words, over

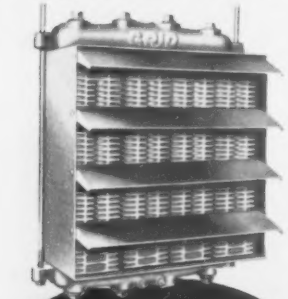
(Continued on page 156)

GRID

CAST IRON STEAM HEAT TRANSFER SURFACE

UNIT HEATERS
BLAST HEATERS
RADIATORS

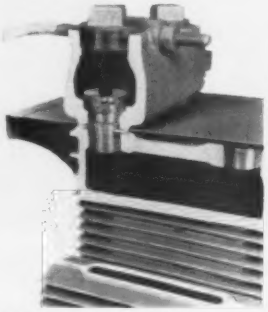
one piece construction high test cast iron heating sections



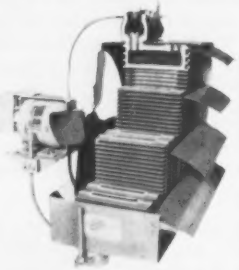
Trouble-free heating service since 1929

GRID All cast iron construction provides the answer to unit heater and blast heater problems for railroads . . . the GRID condenser eliminates internal electrolytic corrosion because all metals in contact with steam are similar . . . eliminates external corrosion because GRID cast iron construction resists acid fumes and contaminated air . . . eliminates use of reducing valves where high steam pressure is used, because GRID will operate on steam pressures up to 250 P.S.I. . . . 450° temperature. No soldered, brazed, welded or expanded connections—a construction designed and built to last for years . . . uninterrupted service records on railroads of more than twenty years are common among GRID users.

These cut-away views of GRID Unit Heaters illustrate why GRID cast iron construction ends unit heater and blast heater maintenance problems.



GRID construction provides maximum heating performance . . . more air changes at lower outlet temperatures . . . warm, comfortable air in ample volume to floor level . . . no wasted heat through stratification. The heat transfer element of GRID Unit Heaters, Blast Heaters and Radiators is a high tensile strength cast iron casting with radiation fins cast in one piece to the steam chamber . . . one piece fin section assures constant heat transfer . . . the wide fin spacing prevents clogging and permits easy cleaning. GRID steam heat transfer service is designed and manufactured to be better . . . GRID installations save money as GRID requires no maintenance . . . units installed in 1929 are still operating. No ordinary unit heater approaches GRID's record for trouble-free heating service.



Get the complete story on GRID Unit Heaters, GRID Blast Heaters and GRID Radiation
Write for your copy today!

The top cut-away view shows top and bottom manifolds connected to fin sections by special threaded nipple . . . bottom view shows wide fin spacing . . . fins are cast integral with steam chamber.

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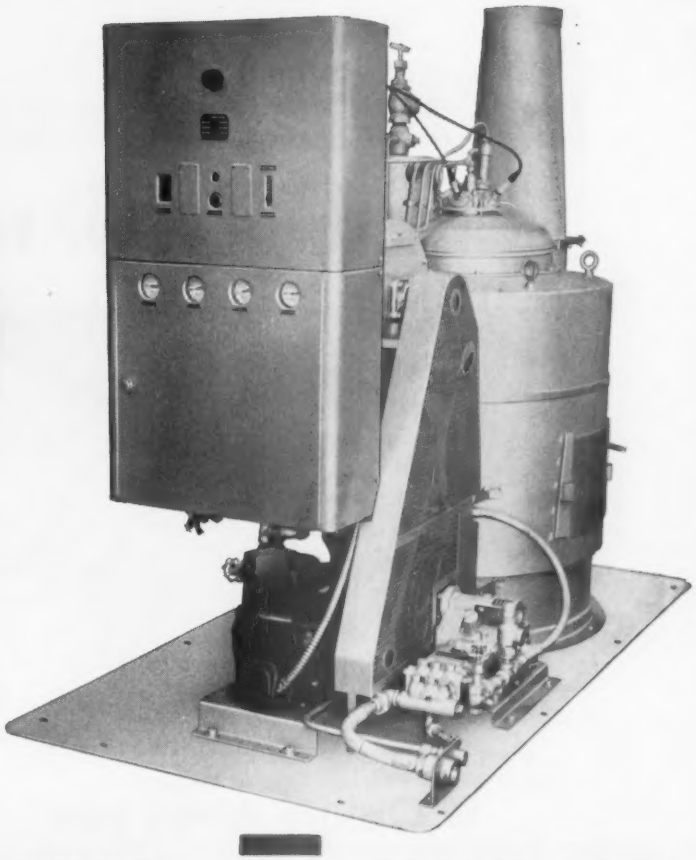
- **SPACE**
- **FUEL**
- **LABOR**

Modulātic needs no enclosure, special foundation, expensive stack. It's shipped fully assembled—just connect and fire up. Base plate, upon which the 60-h.p. unit shown at right is delivered, measures only 4′ x 7′. Over 13,000 in use.



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Quick-steaming, "go anywhere" Modulātics are the answer to railroading's steam needs!

Steam for Shops? Merely set controls for the pressure wanted– Modulātic does the rest.

Laundry Operation? Multiple Modulātics can have a single, coordinated, automatic control.

Powering Piledrivers? Small size, light weight, less fuel consumed–no wasted water.

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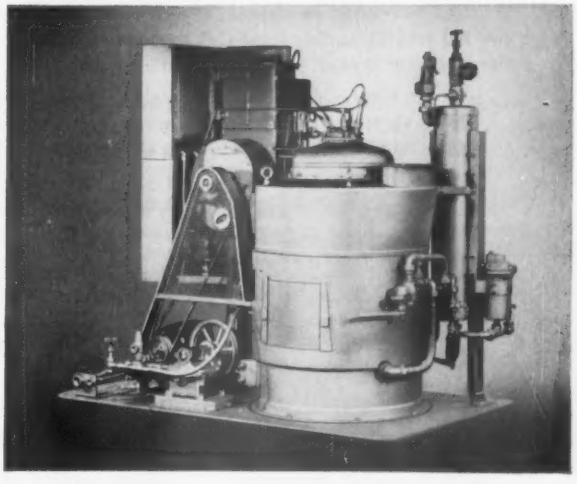
Building Heating? Just press the "start" button–operation is automatic.

More and more railroads, everywhere, are enjoying the convenience, economy, and minimized maintenance of this modern "push-button" steam. Even the largest Modulātic takes less space than a desk and chair. Steam is made only "on demand" to maintain selected pressure.



Sizes range from 10 to 160 h.p.; pressures from 2 to 285 p.s.i. and much more, if required. Maximum floor load, only 150 lbs./sq. ft. Choice of oil, gas, or combination burner. Steam from cold starts in 2 minutes ends early reporting and standby.

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In DIESEL CLEANING, too

Oakite gives you

low-cost end results

RESULTS TALK! So if you're after genuine savings in diesel cleaning check the *results* Oakite delivers.

Take for example, the cleaning of diesel interiors. One Class 1 Road had been using an alleged "low-cost-per-pound" material for this critical job. Then they tried Oakite Composition No. 72—costing peanuts more per pound. Here are the *end results:*

In one month—washing 300 diesels—Road cut their cleaner poundage from 1200 lbs. to 337 lbs. They cut their monthly cleaner cost from $144.00 to $57.63. And they got better cleaning, better rinsing.

Another Road, using this same Oakite 72 for washing diesel exteriors, saves over $800.00 a month. They use 5.6 gallons at 2 oz/gal. as against 20 gallons at 6 oz/gal. per diesel. These figures speak for themselves. Results tell the true story.

Booklet F-8055 describes the many specialized Oakite materials and methods that guarantee economical railroad maintenance cleaning. Send for your copy to Oakite Products, Inc., 46 Rector Street, New York 6, New York.

OAKITE SCIENCE

gives you the important advantage . . .

LOW-COST END RESULTS

Export Division
Cable Address: Oakite

RAILROAD DIVISION

(Continued from page 154)

the past quarter-century, expensive truck transportation has been supplanting less expensive rail transportion. This article explains why: the phenomenon is partly the result of a growing demand for a more expensive kind of transportation. But it is also a result of an obsolete government regulatory policy that has not allowed railroads to compete for traffic they can carry efficiently.

•

RAILROADS AND THE CHANGING FACE OF BRITAIN, 1825-1901, by Eric L. Waugh. The Business History Review, September, 1956, pp, 274-296. Graduate School of Business Administration, Harvard University, 217 Baker Library, Soldiers Field, Boston 63.

This article goes beyond the usual easy generalization that the coming of the railroad brought profound economic and social changes. In revealing a broad panorama, specific features which are brought into sharp focus include the conflicting impact of railroads on local craftsmen and tradesmen; the initial stimulus to extreme concentration and then to dispersion of population; the influence upon industrial decentralization; the changing railroad attitude toward passenger traffic; the rise of dormitory suburbs and their conversion into integrated communities; the social implications of the new mode of conveyance; and the significance in labor reform of railroads as large employers.

ANNUALS

CEMENT AND CONCRETE REFERENCE BOOK, 1956-1957. 112 pages. Portland Cement Association, 33 West Grand ave., Chicago 10. Free.

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BITUMINOUS COAL TRENDS, 1956. 164 pages, charts, tables. National Coal Association, Southern Bldg., Washington 5, D.C. Free.

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FACTS AND FIGURES ABOUT BRITISH RAILWAYS, 1956 Edition. 48 pages. British Transport Commission, 222 Marylebone Road, London, N.W.1, England. Free.

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AUTOMOBILE FACTS AND FIGURES, 36th Edition, 1956. 80 pages. Automobile Manufacturers Association, New Center b'dg., Detroit 2. Free.

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ACCIDENT RATES, 1956. 49 pages. National Safety Counci', 425 N. Michigan ave., Chicago 11. Free.

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ACCIDENT FACTS, 1956 Edition. 96 pages. National Safety Council, 425 N. Michigan ave., Chicago 11. $1.

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APPLICATIONS OF ELECTRICITY TO RAILWAYS, 1955. 57 pages. Association of Ameri-

(Continued on page 158)

Mr. Railway Equipment Executive:

Solve Your Car Building and Repair Problems Now—Check This MORTELL List!

It's the Complete Line from One Recognized Source —Specially Developed for Railroad Use

☐ **No. 3014 TAN ANTI-SKID**
A mastic developed to fill depressions and provide a tough, anti-skid surface on Nailable Steel Floors. Smooth, easily cleaned surface will withstand impact, is acceptable for all types of lading. Applied as received with notched trowel or screed.

☐ **No. 3011 TAN GROOVE FILLER**
No. 3012 BLACK GROOVE FILLER
3011 (non-asphaltic) and 3012 (asphaltic) sealers for filling nailing grooves in all types of Nailable Steel Floors. Withstands impact, remains flexible without cracking or chipping at all operating temperatures.

☐ **No. 3009 STEEL FLOOR COVERING**
Non-skid, abrasion-resistant coating provides tough, durable covering for steel floors. Easily applied by brushing or spraying, does not require thinning. Steel Floor Covering dries tack free in six hours at 1/32" thickness. Covering attains full hardness in approximately 48 hours.

☐ **RAILWAY INSULMAT**
A water emulsion coating that prevents condensation drip, protects metal against rust and corrosion, seals seams and joints, deadens sound. Developed for steel box car ceilings, passenger car interiors, air conditioning ducts. Adheres to any clean surface. Coverage—six sq. ft. per gallon at 1/4" thickness.

☐ **SPECIFICATION CAR CEMENTS**
Fibrous asphalt protective coatings, made to individual railroad's specifications for composition, drying oil content, consistency. For use on interior or exterior surfaces. Provides excellent protection against corrosion. Available in black, red or aluminum. Coverage: 50 sq. ft. per gallon at 1/32" thickness.

☐ **RED CAR CEMENT**
Tough, durable protective coating for freight car exteriors. Heavy fluid consistency, applied in one coat, eliminates costly painting. Greater film thickness than ordinary paint, provides better protection against rust and corrosion. Made to individual railroad's specifications for freight car red. Coverage—50 sq. ft. per gallon at 1/32" thickness.

☐ **ALL-WEATHER INSULMAT**
A solvent-reduced coating which may be applied outside the year around. Developed for steel box car ceilings, passenger car walls and ends or any metal surface. Prevents condensation drip, protects against rust and corrosion, seals seams and joints, deadens sound. Coverage—six sq. ft. per gallon at 1/4" thickness.

☐ **No. 3021 TAN CEILING INSULATION FOR BOX CARS**
NEW...and *exclusive* with Mortell, No. 3021 is an improved, non-asphaltic cutback type plastic coating developed specifically for preventing condensation drip on galvanized steel box car ceilings. *Impervious to pentachlorophenol solvent vapors.* Eliminates necessity of sealer coat. Excellent adhesion without preliminary acid treatment. Can be applied outside in any weather condition. Coverage 6 sq. ft. at 1/4" thickness.

☐ **ARMORTEX PLASTIC CAR LINER**
Tough, permanent Armortex is available in two grades: 1) *Spray-Brush Grade* for sealing smaller cracks, for coating car lining, ends and floor 2) *Caulking Grade* for sealing larger cracks and gouges in linings, doorposts. Excellent adhesion to wood and primed steel. Easily applied at shop, repair track or siding. Coverage—*Spray-Brush Grade* covers 50 sq. ft. per gallon at 1/32" application.

☐ **MORTEX No. 4**
Protective coating in plastic form that dries to a tough, flexible film with rubber-like appearance. Recommended for underframes and roofs of freight and passenger cars. Also for steel bridges, platforms and runways, to dampproof concrete structures or as a seal over porous insulation. Coverage: 50 sq. ft. per gallon at 1/32" thickness.

☐ **No. 3007 FIRE RESISTANT ASPHALT EMULSION**
Protective coating developed to provide fire protection in addition to resistance against rust and corrosion. Rich, full black finish retains flexibility with age—over wide temperature range. Recommended as protective coating for undersides of baggage and mail cars, for wooden trestles and bridges. Coverage—25 sq. ft. per gallon at 1/16" thickness.

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JW Mortell COMPANY

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RAILROAD DIVISION, KANKAKEE, ILLINOIS

J. W. MORTELL COMPANY,
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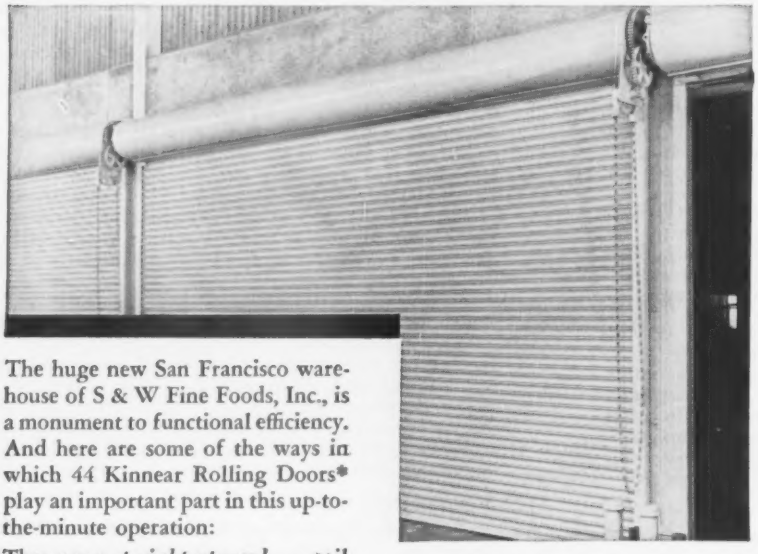
44 Kinnear Steel Rolling Doors

Speed Service at S&W Fine Foods —



The huge new San Francisco warehouse of S & W Fine Foods, Inc., is a monument to functional efficiency. And here are some of the ways in which 44 Kinnear Rolling Doors* play an important part in this up-to-the-minute operation:

They open *straight upward* . . . coil smoothly out of the way *above the opening* . . . clear the *entire* doorway quickly — from jamb to jamb and from floor to lintel.

They stay *out of reach* of damage by wind or vehicles.

All floor and wall areas around the doorway are *always* fully usable.

Ceiling space around openings remains clear at *all times*. There's never any interference with cranes, hoists, conveyors, lighting, or other overhead equipment. Goods can be stacked "clear to the rafters" inside or outside the opening.

The tough, flexible, all-steel curtain of interlocking slats assures *long* service, *low* maintenance costs, and *extra* protection against fire, wind, intrusion, and vandalism.

Heavy galvanizing—1.25 ounces of pure zinc per square foot of metal (ASTM Standards) — gives added resistance to weather, wear, and corrosion.

Kinnear Rolling Doors are built any size, for old or new buildings, with motor or manual control. Write for information, or for recommendations on your door needs.

*33 Kinnear Steel Rolling Doors 18'9" wide by 10' high, ten doors 10' wide and 10' high, and one door 6' wide by 7' high.

KINNEAR ROLLING DOORS — Saving Ways in Doorways

The KINNEAR Mfg. Co.

FACTORIES:
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1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

(Continued from page 156)

can Railroads, Bureau of Railway Economics, Transportation bldg., Washington 6, D.C. Free.

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A YEAR BOOK OF JNR INFORMATION, 1955 Edition. 65 pages. Japanese National Railways, Marunouchi, Tokyo, Japan. Free.

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YEARBOOK OF RAILROAD INFORMATION, 1956 Edition. 100 pages. Eastern Railroad Presidents Conference, 143 Liberty st., New York 6. Free.

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INTERNATIONAL RAILWAY STATISTICS, Year 1954. 158 pages. General Secretariat of the International Union of Railways, 10 Rue de Prony, Paris XVII, France.

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FATAL FALLACIES, The Travelers 1956 Book of Street and Highway Accident Data. 29 pages, illustrations. The Travelers Insurance Companies, Hartford, Conn., Attention Mr. J. G. O'Brien. Free.

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PROCEEDINGS, ASSOCIATION OF AMERICAN RAILROADS, MECHANICAL DIVISION 1954 and 1955. 598 pages, illustrations, drawings. Association of American Railroads, 59 E. Van Buren st., Chicago 5. $10.

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BRITISH TRANSPORT: 1955. Notes on the Annual Report and Accounts of the British Transport Commission. 25 pages. British Transport Commission, 222 Marylebone Road, N.W.1, England. One shilling.

•

JOINT EQUIPMENT COMMITTEE [REPORT ON] COSTS OF RAILROAD EQUIPMENT AND MACHINERY, July 1, 1956. 25 pages. Association of American Railroads, Finance, Accounting, Taxation & Valuation Department, Transportation bldg., Washington 6, D.C. Free.

•

FREIGHT COMMODITY STATISTICS, CLASS I STEAM RAILWAYS IN THE UNITED STATES FOR THE YEAR ENDED DECEMBER 31, 1955. 278 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from Government Printing Office, Washington 25, D.C. $3.50.

•

AIR TRANSPORT FACTS AND FIGURES, 17th Edition, 1956. 23 pages. Air Transport Association of America, 1107 Sixteenth st., N.W., Washington, D.C. Free.

FROM THE MANUFACTURERS

MOTOROLA COMMUNICATIONS PARTS CATALOG NO. 256. 72 pages. Motorola Communications & Electronics, Inc., Factory Parts Dept., Dept. RA, 589 E. Illinois st., Chicago 11. Available upon request on company letterhead.

A new catalog devoted entirely to two-way radio communications parts. Listing more than 6,000 components,
(Continued on page 160)

FRISCO LINES use Pittsburgh's New

HOT-SPRAY

ALKALI- AND ACID-RESISTANT VINYL

CARHIDE®

to Protect New Covered Hopper Cars!

One of the fleet of PS-2 covered hopper cars built by the Pullman-Standard Car Mfg., Company for the St. Louis-San Francisco Railroad, finished with Pittsburgh's new Hot-Spray Alkali- and Acid-Resistant Vinyl CARHIDE.

One coat of primer and one coat of Vinyl finish applied hot puts cars into service more rapidly.

Now you get improved appearance and extra years of armor-like protection against corrosive cargos when you paint covered hopper cars with Pittsburgh's remarkable new Hot-Spray Alkali- and Acid-Resistant Vinyl CARHIDE.

This latest development in famous CARHIDE railway finishes gives you two-in-one efficiency —fortified protection and longer-wearing endurance with a single finish application. Hot-Spray AAR CARHIDE uses heat instead of thinners to control viscosity in periods of wide temperature variations.

Better working conditions result, because Hot-Spray AAR CARHIDE is applied with less air pressure, thus reducing "fog" or spray mist. It goes on more uniformly and has better adhesion. Because there is less thinner to evaporate, imperfections resulting from shrinkage are kept to a minimum. The final finish has higher gloss and is more durable, insuring longer-lasting protection.

Pittsburgh's AAR CARHIDE is not affected by such cargos as sulphur, soda ash, phosphates, lime, cement and most other corrosive materials. For additional information about this new finish which gets hopper cars into service more quickly and keeps them rolling longer, get in touch with Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

PPG **PITTSBURGH® PAINTS**

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

(Continued from page 158)

it will serve as a reference source for the technician servicing mobile, base station and portable units. For convenience, parts are listed in two ways: the first section lists and describes parts by category; the second section references all components by part number. Among the components are tubes, vibrators, capacitors, fuses, rectifiers, switches and speakers . . . in fact, all electrical or mechanical replacement parts needed for two-way radio maintenance.

•

MODERN MOTIVE POWER IN ACTION. 4 pages. General Electric Company, Advertising and Sales Promotion Dept., Dept. RA, Schenectady, N.Y. Free.

Dieselization and the ways in which it helped the Ahnapee & Western Railroad are outlined in this report—GED 3083. It shows how the short-line A&W balanced its operation and realized savings in excess of original estimates. A four-point plan for providing any railroad with modern motive power is explained.

•

OHIO RECTANGULAR AND RAIL HANDLING MAGNETS. Bulletin 150-A. 2 pages. The Ohio Electric Manufacturing Co., Dept. RA, 5400 Dunham Road, Maple Heights, Cleveland. Free.

Describes the complete line of magnets ranging in size from 19 x 32 in. up to 28 x 74 in., gives data on materials of construction, headroom required, dimensions, etc.

•

PATHWAYS TO PROFITS. 16 mm sound, color film, 12 mins. Link-Belt Company, Public Relations Dept., Dept. RA, Prudential Plaza, Chicago 1. Available for free showing on written request.

Trukveyors, in-the-floor type conveying systems for moving four-wheel platform trucks, and how they solve materials-handling problems and reduce operating costs, are the subjects of this new film. The conveying by Trukveyor of large component parts through process and assembly operations in a plant of a heavy equipment manufacturer is also shown. Engagement and disengagement of four-wheel platform trucks with conveyor chain below floor, is clearly shown in animated detail, as are operations of other working components comprising the system.

•

OAKITE MANUAL OF RAILROAD MAINTENANCE CLEANING PROCEDURES. 24 pages, illustrations. Oakite Products, Inc., Dept. RA, 146 Rector st., New York 6. Free.

Based on the company's extensive work with railroad personnel, the new manual gives detailed procedures for exterior cleaning by foam spray, high pressure, automatic, or manual applica-

(Continued on page 172)

With International Ties. Each is made of select timber. It's thoroughly seasoned, chemically impregnated, carefully inspected. It's branded for everlasting identification, dated for positive proof of performance. Insist on the IC brand for dependable, time-tested ties. Their durability and longevity pay dividends over 3,000 times a mile . . . for years and years. International Creosoting and Costruction Company. Galveston, Beaumont and Texarkana.

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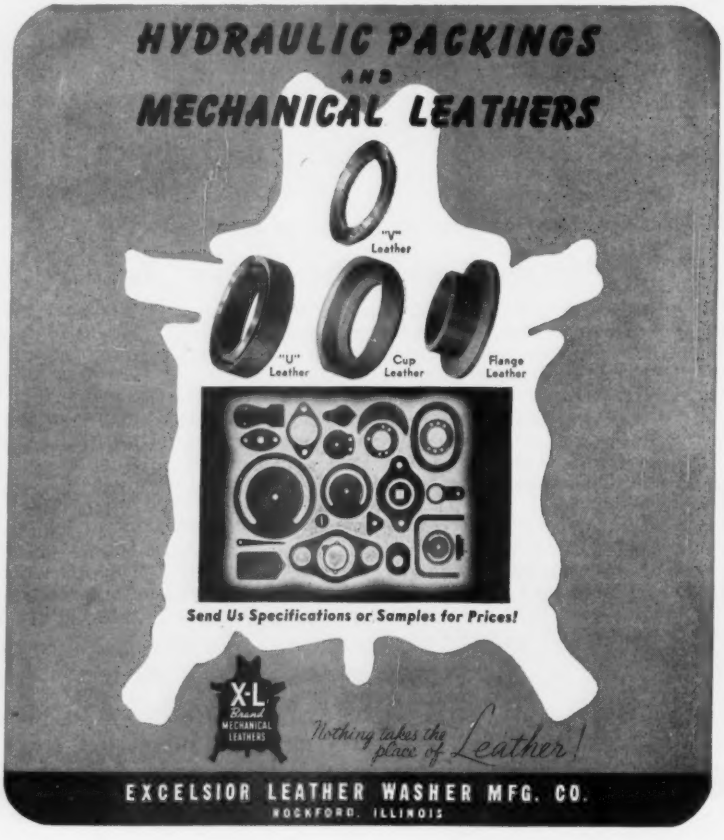
The International Dating Brand

INTERNATIONAL TIES



ALL *Positive* BRAKE BEAM PARTS ARE RENEWABLE

POSITIVE
AAR No. 18—Certificate No. 52
The fact that ALL parts of the Positive Brake Beam ARE RENEWABLE is ONE of the reasons that there are MORE POSITIVE BRAKE BEAMS SOLD THAN ANY OTHER KIND! There are other reasons, too . . . Design and dependability mean higher efficiency for operating men—lower cost on repairs and replacement. The real reason is: real reasoning!
CHICAGO RAILWAY EQUIPMENT CO.
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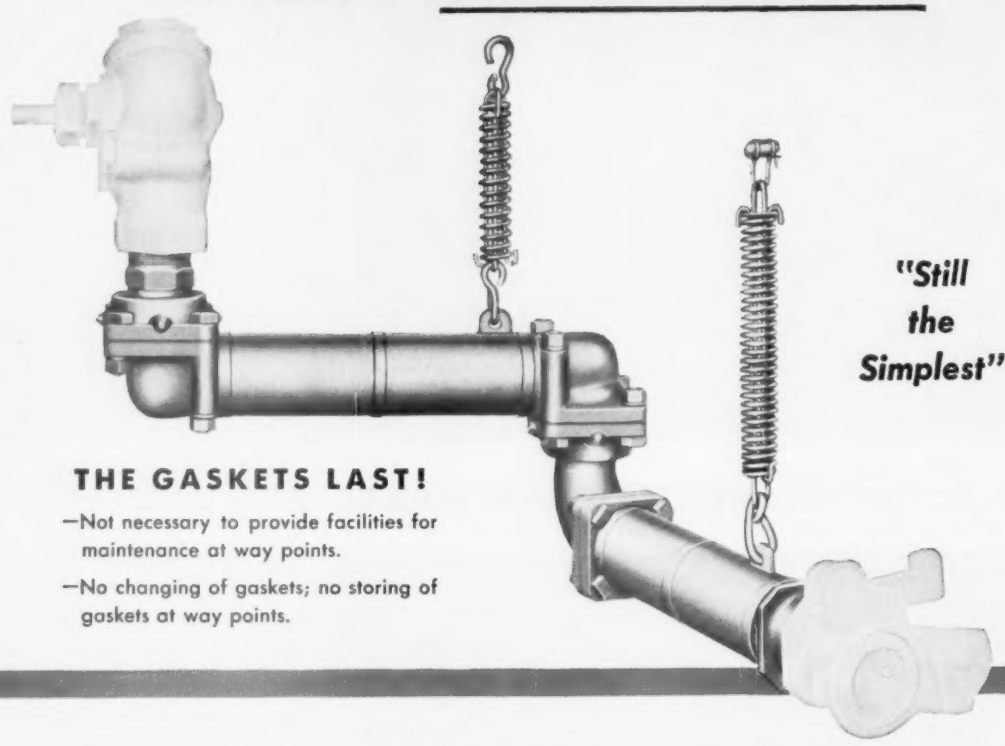
Season-to-Season Service without Maintenance



"Still the Simplest"

THE GASKETS LAST!

—Not necessary to provide facilities for maintenance at way points.

—No changing of gaskets; no storing of gaskets at way points.

Reports from Users

2 Years without Gasket Change . . .

"Barco Steam Heat Connections on our _____ streamliner have gone more than two years without a gasket change."

Makes Test . . .

"We started a test of Barco Connections on our road. A year later we ordered another sixty and only one was removed in a year."

Longer Service . . .

"Tests have proved that Barco Connectors withstand diesel dry steam better and give longer service. Annual removal and repairs program has proved Barco superior."

Less Maintenance . . .

"We are installing Barco connections as rapidly as possible because they require so much less maintenance."

Go Without Attention . . .

"Barco 2½" Connections on Diesel locomotives are checked in the Fall and, barring accidents, they go the full year without attention."

—No. 1 Reason Why Barco Leads!

Now, as always, Barco Steam Heat Connections give you season-to-season service without worry about maintenance. Users have found they can depend on Barco connections to stand up and stay tight!

This means a BIG SAVING in maintenance costs. *A comparative check of gasket consumption in your car yards can be very enlightening.* MAKE THIS CHECK—others have and now use Barco. Let us give you the facts.

FOUNDED 1908
BARCO
PRODUCTS BACKED BY EXPERIENCE

BARCO MANUFACTURING CO.

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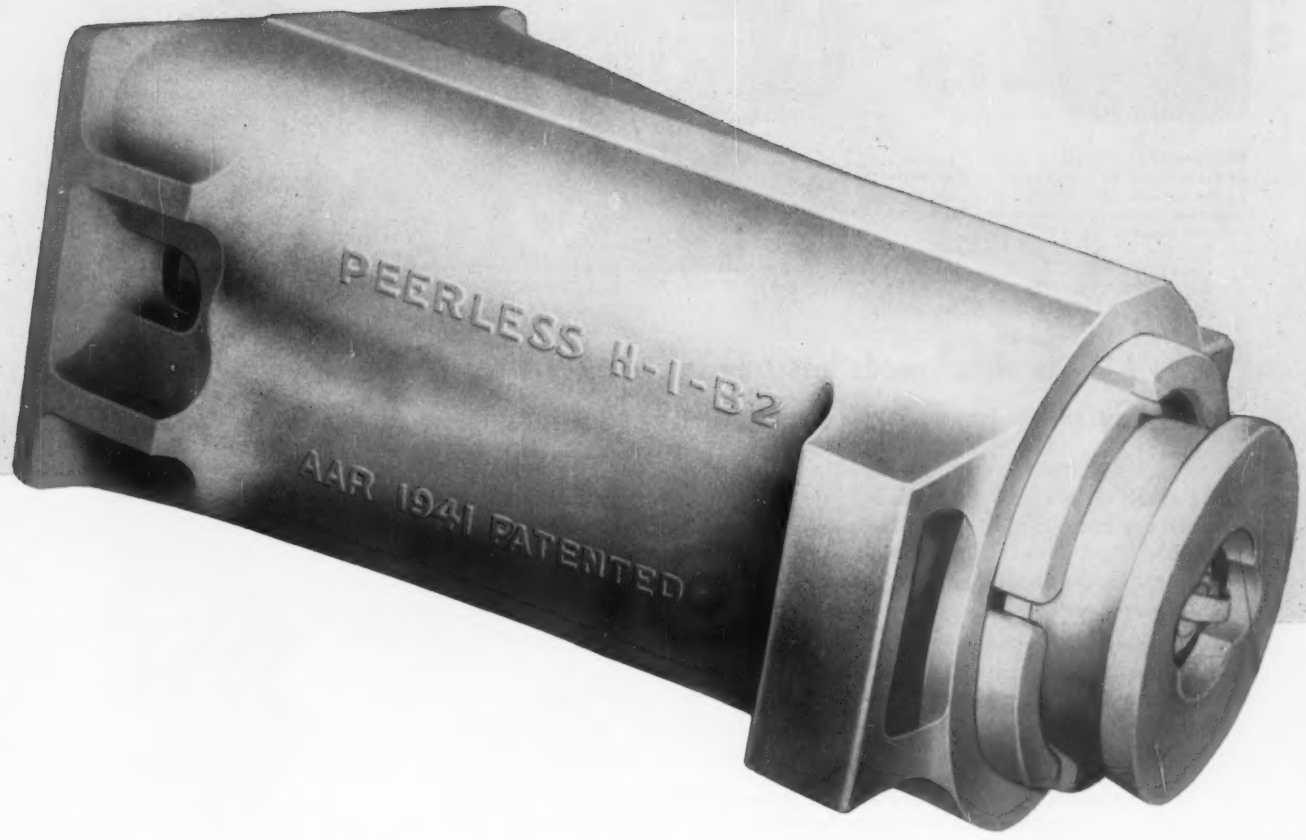
Entering Our First Quarter-Century...

PEERLESS *protection*

for cars and lading



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EQUIPMENT COMPANY
Since 1932
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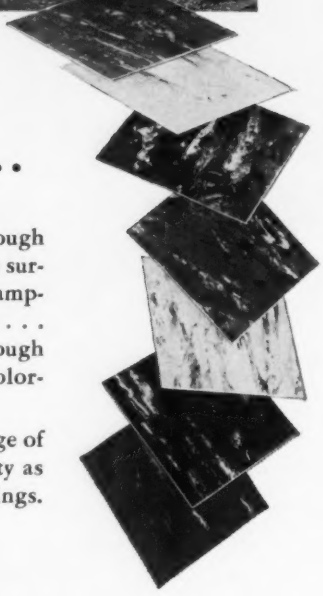
Selected for maximum wear with minimum care

Johns-Manville TERRAFLEX Vinyl Asbestos Floor Tile

. . . in Budd Company R. D. C. all-stainless steel passenger cars

Heavy traffic in this Budd Company R.D.C. diesel-powered passenger car has little effect on the durable J-M Terraflex floor. A damp-mopping whenever necessary will restore its colorful beauty.



J-M Terraflex® needs less care, gives more wear than any other type of resilient floor of equal thickness . . .

As a result of its tested performance in railroad car installations, Johns-Manville Terraflex Vinyl Floor Tile is standard equipment in the Budd Company's new R.D.C. passenger cars.

Johns-Manville Terraflex is a flooring of time-proved superiority. Made of vinyl and asbestos, it is exceptionally tough and resistant to traffic . . . defies grease, oil, strong soaps and mild acids.

Terraflex saves time and dollars through low-cost maintenance. Its nonporous surface requires no hard scrubbing . . . damp-mopping keeps it clean and bright . . . frequent waxing is eliminated. Through years of service, Terraflex retains its colorful beauty.

Terraflex is available in a wide range of pleasing colors that will bring beauty as well as utility to floors in cars and buildings.

For the full Terraflex story . . . and its advantages for railroad service, get in touch with your Johns-Manville Representative or write Johns-Manville, Box 158, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

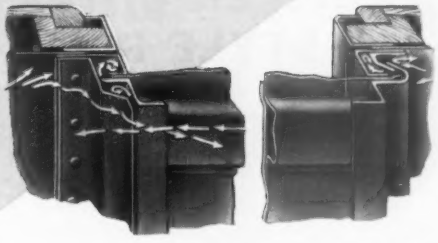
Johns-Manville

98 YEARS OF SERVICE TO TRANSPORTATION

Baffle damaging weather with Superior car doors!

The money you save on damage claims is only a small part of the *real* benefit you get from *Superior* weatherproofing!

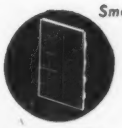
***Most* important is the *good will* of shippers. *Paying* damage claims is no benefit to either party . . . *eliminating* damage claims creates new business for both!**



NOTE THIS *BAFFLE* DESIGN which keeps rain, snow, cinders and shipper's ILL-WILL *OUT!*

Free-Rolling on ball bearings

Tight Closing due to wedge design



Smooth inside surface— no "corrosion pockets" or infestation harbors.

The one man, one hand door.

6-7

SUPERIOR

CAR DOOR COMPANY
332 SOUTH MICHIGAN AVE. • CHICAGO 4

An Advance Over All Existing Devices For Stabilizing Trucks Lacking Built-in Control . . .

HOLLAND RIDE STABILIZER UNIT, STYLE RS-1

The Holland Ride Stabilizer Unit, Style RS-1, is a significant advance over the spring "package" method of Stabilizing Old Style Trucks . . . each installation providing new truck riding qualities at a saving over the cost of a new truck of approximately 80%!

Applying Holland Ride Stabilizer Units, Style RS-1, to such trucks will make them behave by providing a superior degree of stabilization, preventing the bounce, and rock and roll that can cause so much damage to lading, equipment and track.

Now you have a better reason than ever before for making your older cars belong in modern high speed service with Holland Ride Stabilizer Units, Style RS-1.

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For complete information, write for Bulletin No. 16-A

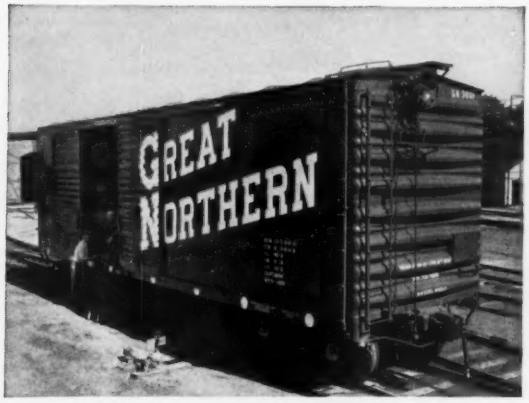
1495R

HOLLAND COMPANY

332 South Michigan Avenue • Chicago 4, Illinois

Laying and welding N-S-F in one of 800 new boxcars at Great Northern's St. Cloud, Minn. shops.

N-S-F* helps THE GREAT NORTHERN RAILWAY BUILD FOR THE FUTURE



Railroad inspector giving N-S-F a final check as new Great Northern boxcar rolls off the road's final assembly line at St. Cloud.

Cars equipped with NAILABLE STEEL FLOORING enable progressive railroads to furnish shippers with Class A cars for all kinds of ladings—and safer cars, too, for shippers' personnel. Moreover, N-S-F is a flooring that can make for substantial savings over the years in both original investment and maintenance costs. It is equally economical in either new or used cars.

Pertinent, timely performance and cost studies are available from N-S-F representatives in Chicago, New York, Philadelphia, St. Louis, Cleveland, San Francisco, Minneapolis and Atlanta. In Canada, N-S-F is made and sold by International Equipment Co., Ltd., Montreal.

*N-S-F (TM): NAILABLE STEEL FLOORING

Made and sold by—

STRAN-STEEL CORPORATION

Detroit 29, Michigan • A Unit of

NATIONAL STEEL CORPORATION

Progress

OUR NATION often is referred to as a land of plenty, which it is.

But it was not always a land of plenty. For many years, it was a rugged wilderness with all of its vast resources lying dormant in the good earth.

Our nation became a land of plenty because it was a land where people were free to dream and envision, free to explore and create.

The people of this country never have been willing to let well enough alone. They have believed that we should not be content with things as they are . . . not if creative and constructive ideas could produce improvements.

That is one of the basic reasons why we live today in a land of prosperity and plenty . . . in a land where more people enjoy more of the good things of life than anywhere else on earth.

A willingness to let well enough alone has enslaved the lives of millions of people in Asia and Africa, and in many other parts of the world. These people live today just as their forefathers did centuries ago . . . primitive and poverty-stricken . . . despite the rich resources of their land.

Such is the fate of people who persist in believing that you should let well enough alone.

This comfortable belief, if persisted in, stifles the progress of any business. The people of this country never have subscribed to it. They have insisted upon creating new and better ways of working and living.

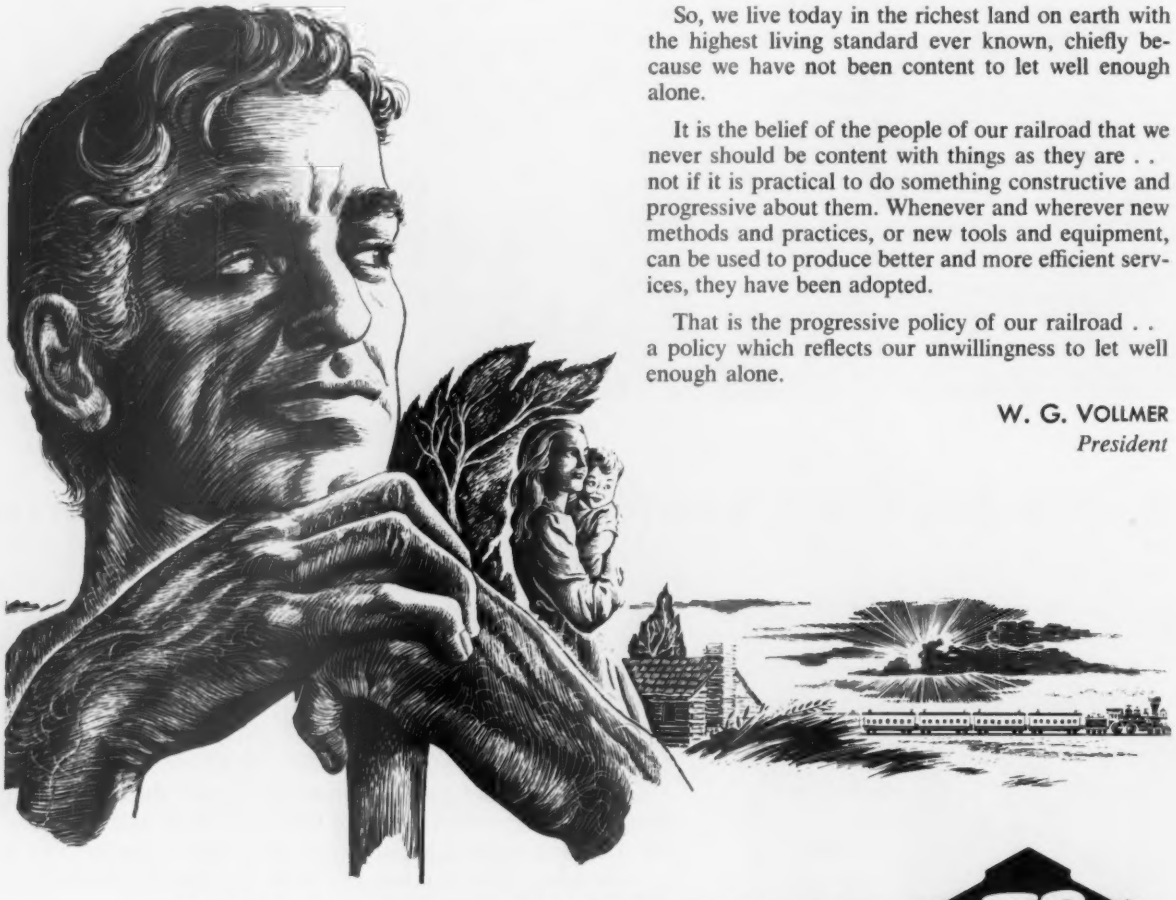
They have persisted, also, in creating new methods and practices . . . new tools and machines.

So, we live today in the richest land on earth with the highest living standard ever known, chiefly because we have not been content to let well enough alone.

It is the belief of the people of our railroad that we never should be content with things as they are . . not if it is practical to do something constructive and progressive about them. Whenever and wherever new methods and practices, or new tools and equipment, can be used to produce better and more efficient services, they have been adopted.

That is the progressive policy of our railroad . . a policy which reflects our unwillingness to let well enough alone.

W. G. VOLLMER
President



TEXAS AND PACIFIC RAILWAY GO T&P

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Yes, in just about the same time as you can take a shower, an entire train can be washed clean and bright. At the terminal or on the run one operator and a Whiting Train Washer do the job in minutes. Cars may pass through this washer at the rate of 70 feet per minute . . . an ordinarily hard-to-clean dome type car in as little as 75 seconds.

Solution spraying, brushing, final washing and rinsing, the complete cleaning operation, is easily controlled by the operator from his station. Dirt and grime are removed without injury to car finish by soft, long-life brushes. Brush holders, held automatically against the car sides, have an exclusive self-aligning mechanism to compensate for car tilt. Sectional brush design makes possible various arrangements to handle special shapes, such as indented windows.

Save train washing time and cost! Consult Whiting about the many advantages of the Whiting Train Washer! Write today for Bulletin CW-C-409.

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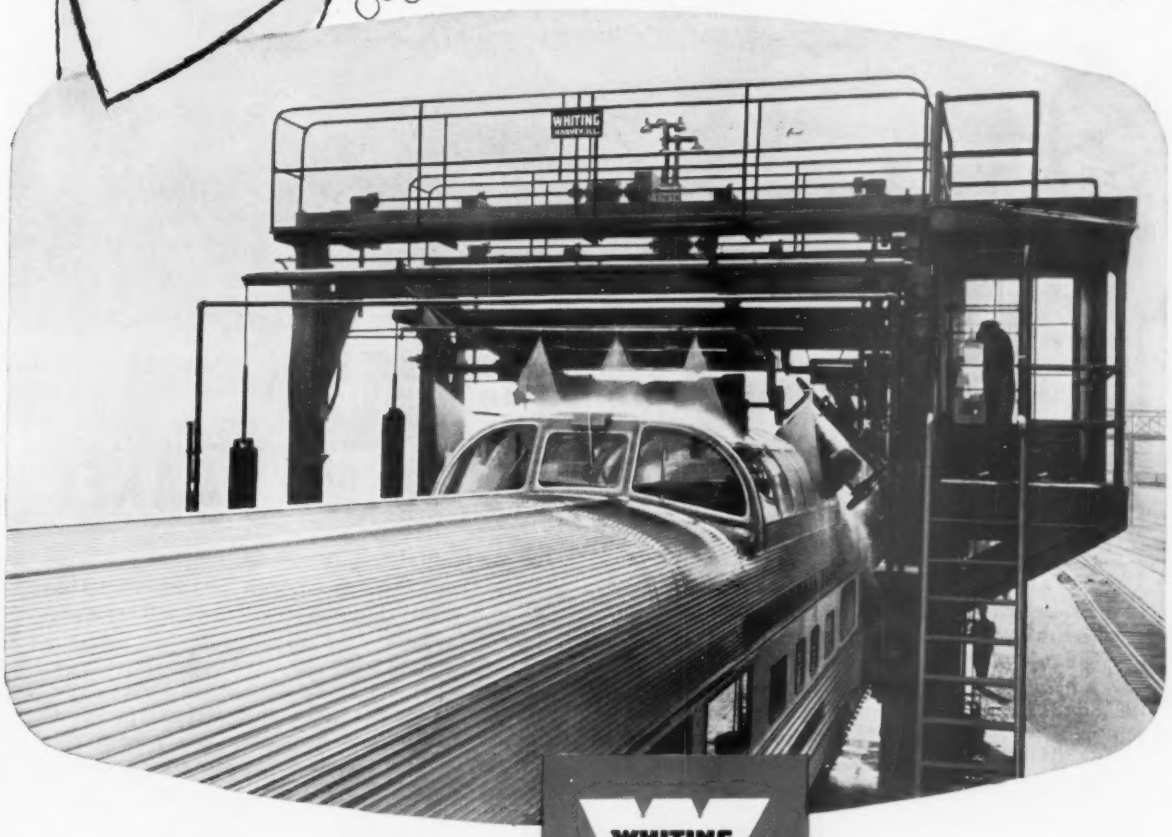

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For speed and safety, specify Equipco Non-Spin Hand Brakes. Available also are the drop-type hand brake for flat cars and the lever-type hand brake for drop-end gondolas. Every brake is A.A.R. Certified. Write today for free booklet, "Hand Brake Safety."

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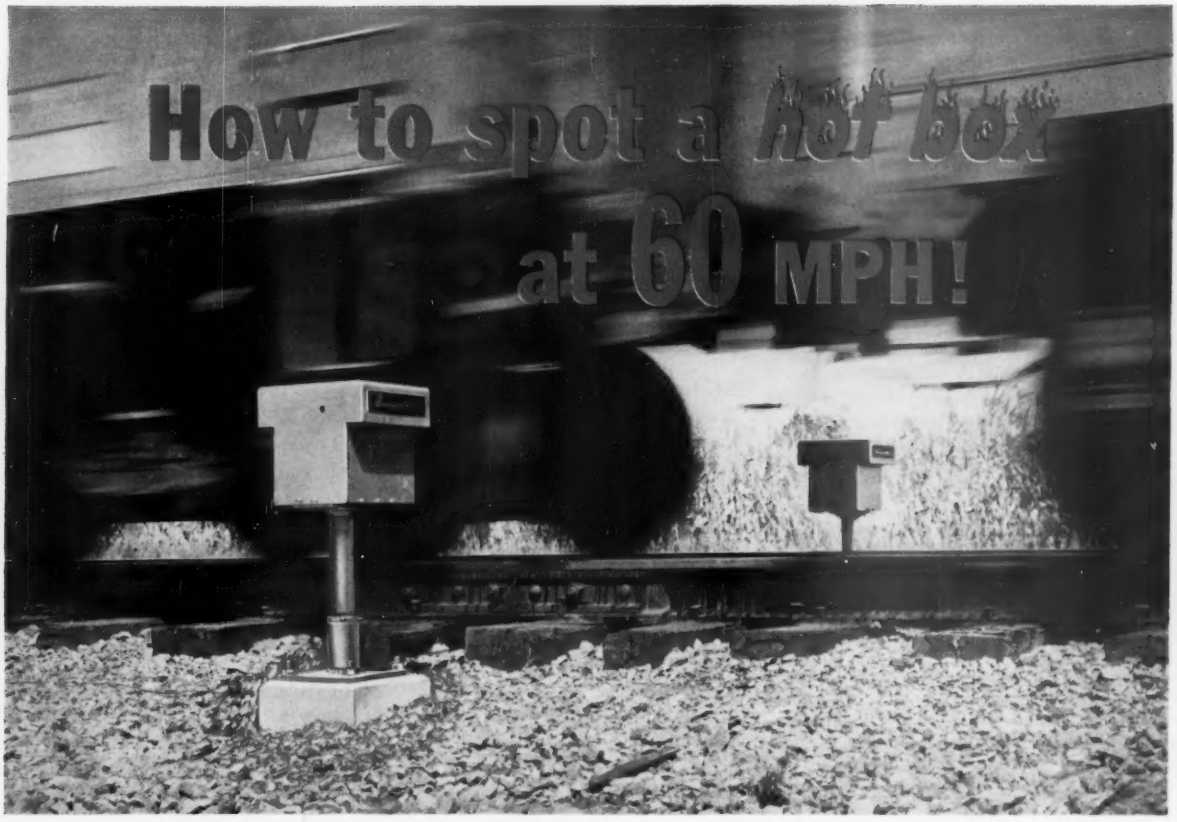

Federal's Hot Box Detector at Mineral, Ill., on the Chicago, Rock Island and Pacific Railroad Company.

It's simple with the new, accurate hot box detector now offered by Federal Telephone and Radio Company. This precision instrument, developed by Farnsworth Electronics Company (another division of IT&T), has been incorporated into a system that will transmit warnings and information to Train and Engine Crews by various adaptations. False temperature readings from hot brake shoes are impossible as the cameras are synchronized to view only passing journal boxes.

A set of hot box detector equipment consists of two identical cameras—one on each side of the track—plus an evaluation unit. A heat-sensitive element of high-speed response is focused on passing journal boxes by means of an electrically-operated shutter. Each exposure to radiation lasts only 2/1000 of a second. A preamplifier in each camera steps up the heat signal for transmission to the evaluation unit. The instrument can be set to react to temperatures between 20° C. and 200° C. above ambient, at train speeds up to 60 mph.

Aside from its primary application, Federal's hot box detector has broad possibilities as a means of assembling data for a "pattern" of hot box occurrences.

SPECIFICATIONS

EQUIPMENT	DIMENSIONS	WEIGHT	FINISH	COOLING
Camera	13" x 14" x 12"	60 lbs.	AAR Standard aluminum paint	Forced air
Monitor	17" x 10" x 15"	61 lbs.		Convection

PERFORMANCE DATA

- Discriminator level adjustable between 20° C. and 200° C. above ambient
- Maximum train speed.....60 mph.
- Power consumption (for one system, including 2 cameras).....230 watts
- Maximum cable distance from camera to monitor 150 ft.

For full information, write to Federal's Railroad Division, Dept. 147

Federal Telephone and Radio Company

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(Continued from page 160)

tion of specially formulated detergents; cleaning of locomotive car, tank, and reefer interiors with equipment developed specifically for the work by Oakite engineers; spray cleaning of trucks, underframes and running gear; parts cleaning in hot or cold tanks; maintenance of water and oil cooling systems; paint stripping and pre-paint conditioning; spray cleaning of journal boxes and roller bearings; filter cleaning. The booklet refers throughout to working drawings, available from Oakite's engineering department, of easily fabricated equipment designed to mechanize cleaning. Reference is also made to cleaning equipment ranging from solution lifting steam guns and portable pressure sprayers, to interior tank cleaning units, which may be purchased or rented.

•

UNIBESTOS INSULATION. 40 pages. Union Asbestos & Rubber Co., Dept. RA, 1111 West Perry st., Bloomington, Ill. Available on request on company letterhead.

Designed as a convenient reference guide, this new catalog presents an entirely new way to specify proper thickness for pipe insulation. The new method is based on the "J" factor. This special index eliminates much complicated computation formerly required to determine economical thicknesses. The book also features detailed drawings that show how single-layer Unibestos is applied to various vertical and horizontal expansion joints as well as to pipe bends, flanges, valves and fittings. Physical and thermal characteristics are clearly presented and illustrated with charts and tables.

•

NEW INTERNATIONAL "75" PAYSCRAPER. 8 pages, illustrations. Booklet CR-585-F. Consumer Relations Department, International Harvester Company, Dept RA, 180 N. Michigan ave., Chicago 1. Free.

Listing a lower-draft frame, much greater visibility, new long-life cerametallic clutch facings, a higher apron lift, bigger push-block, and an improved ejector as highlights of the new member of the 751 series, the folder has 27 different illustrations of the new "75" and its component parts.

What Railroads Will Spend

(Continued from page 74)

Seaboard Air Line

At an approximate cost of $2,755,000 will lay 80 miles of new **rail.** Expects to finish construction of its new yard at Brooksville, Fla. Present plans call for receipt of 3,400 freight **cars** now on order. Expenditure for this equipment will amount to about $27.5 million.

Southern Pacific

During 1957, the SP expects to up-

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grade a total of about 710 flat **cars.** It also expects to take delivery on 5,085 new cars, including 150 flats for use in piggyback service.

Texas & Pacific

Will lay 30 miles of new, and 27 miles of relay, **rail,** the latter cropped and welded into 143-ft lengths. It also will apply 300,000 net tons of stone ballast. About 63 miles of road will receive **CTC,** Fort Worth, Tex., to Judd.

General repairs will be given to 483 freight **cars** and 72 passenger cars. More than 700 freight cars, built in the road's Marshall, Tex., shops, will be placed in service. Six GP-9 road **switchers** will be insalled.

Wabash

The budget (including the Ann Arbor and NJI&I) calls for $1,421,000 for laying new **rail** and $985,000 for relay steel. Also planned is the spending of about $2.7 million on **yard** improvements at Chicago and E. Peru, Ill. The Chicago project was begun in 1956. Projects of the **signaling** and communications departments call for expenditures of $902,700, including an estimated $763,600 for 48 miles of CTC, $62,000 for a remote control interlocking at St. Louis and $77,100 for train radio.

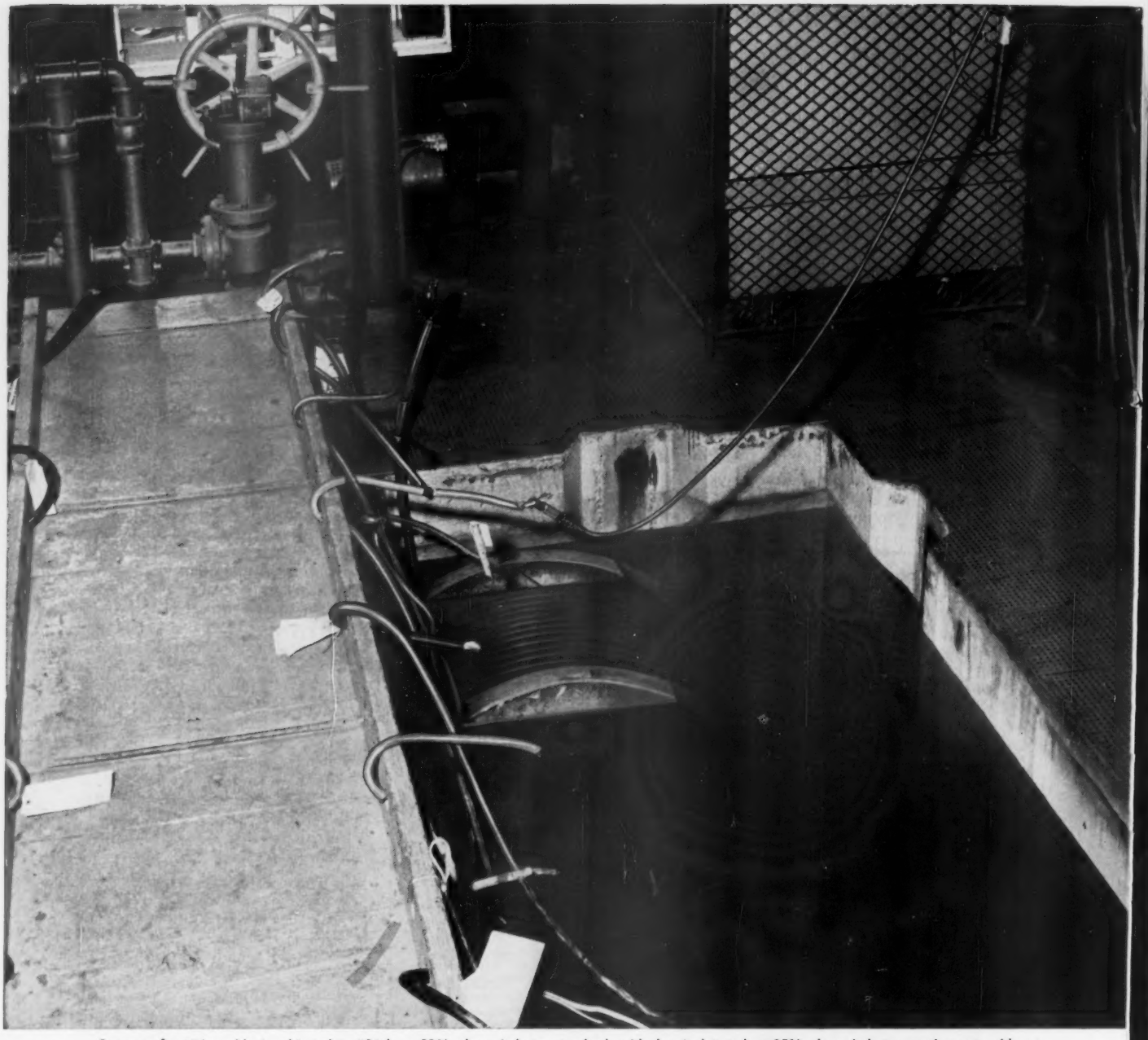
Car repair and rebuilding programs involve 3,218 **freight cars** and 61 passenger cars. Estimated cost is $3,161,-600. Also the road plans to acquire 2,100 freight cars, 400 of which will be built in company shops. Outlay for this equipment will be about $18,767,-550. Fifteen more **trailers** for piggyback service also will be placed in service.

Western Maryland

Rail laying program provides for 5,500 tons of new 115-lb and 132-lb steel at a cost of about $900,000. **Signal and communications** budget provides $20,000 for telephone transpositions between Baltimore and Hagerstown. Under study is respacing of signals between Connellsville, Pa., and Deal. Also being considered is modified CTC between Cumberland, Md., and Big Pool Junction. The road probably will install some interyard data handling equipment.

At Port Covington, Md., revision of car repair and **yard** facilities will cost about $1.4 million. The WM expects to take delivery on 600 roller bearing-equipped **hopper cars** at a cost of about $6,559,000. It also will procure 100 145-cu ft capacity dolomite **containers** for $64,120.

In April, the WM expects to receive two 1,750-hp road switcher **locomotives.**



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New Engineering Bulletin EB-27 gives you full details on performance of Type AB insulation in 15 Industry Specification tests. Ask the Man from Anaconda for your copy. Or write: Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. 56294

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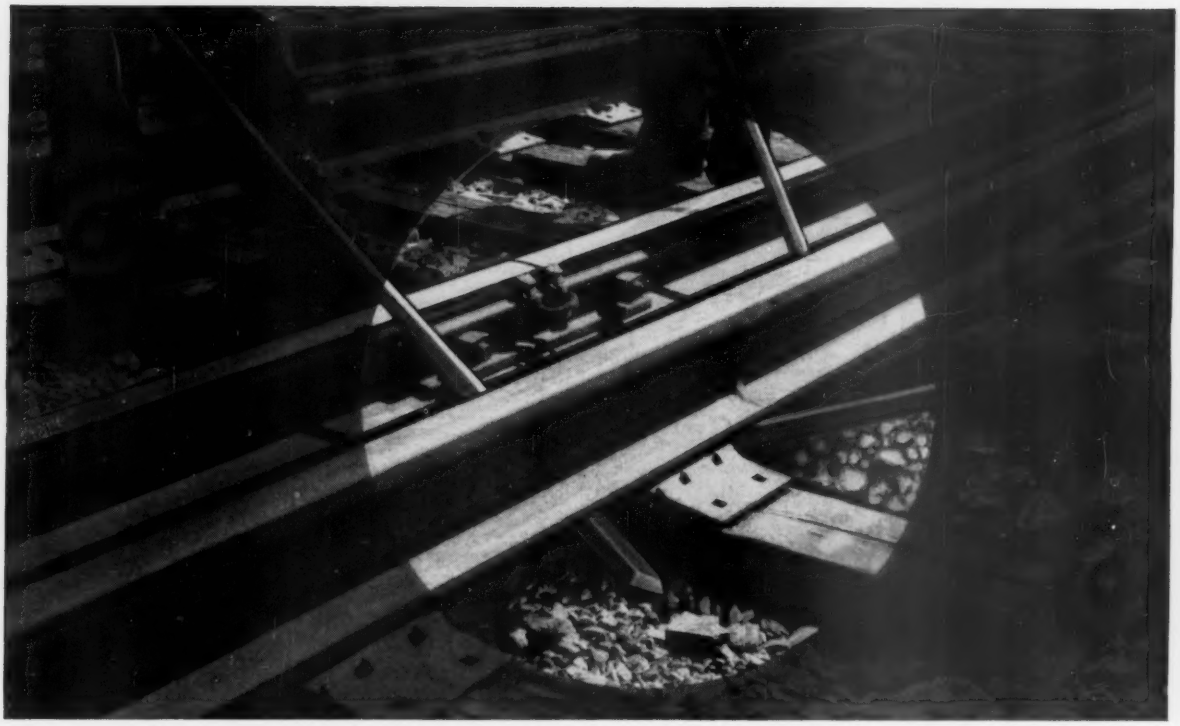

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First Things First in '57

A manufacturer—whose product is sold in part to railroads, but in much larger part to other industries—asked us this question the other day:

"Suppose you were the head of a big railroad—of all the things you believe should be done to improve the railroads' situation, which ones do you consider most urgent?"

That, as the saying goes, is a good question. If your bucket is leaking, you have to plug up all the holes, and not just one or two of them. But some of the holes are bigger than others, and the big holes are obviously the place to start.

There are many things the railroads need which are contingent upon other things being done first—so, obviously, it is with the "first things" that the start should be made. There is one of these "first things" that every railroad can do, no matter how impoverished it may be—and that is to serve its customers the best way it can, with what it's got.

The primary desire of most railroads is to be paid more money for the service they're providing (and there's no doubt that they need all the increases any of them have been asking for). They also want regulatory conditions altered to enable them to compete more effectively for business they're not getting.

Good Will, No. 1 Goal

But neither of these primary desires of most railroad people is attainable without a large measure of support from customers and the general public. There are plenty of shippers who would be considerably more sympathetic toward higher rates if they were getting more prompt and more dependable service than they are. There are many people, including railroad people, who wonder what use there is in providing a regulatory set-up which would give the railroads more traffic, as long as they find difficulty in handling with reasonable promptness any appreciable proportion of the traffic they already have.

Railroads have moved more traffic than they now do, with facilities less modern than their present ones. The car supply situation—while it cannot now be suddenly corrected—would not have become so serious if, over the years, adequate incentives had been provided to induce individual companies to order cars in adequate quantity.

If it be agreed that the prerequisite for most of the many things the railroads want is active friendship on the part of shippers and the public, then does it not follow that the most important thing the railroads can do is do the things most likely to attract this friendship, viz. to improve the promptness and reliability of their service? And—as the most conclusive evidence they could give of their intentions for the future—should they not proceed to put into effect a system of incentives in the car rental structure so that, hereafter, no railroad which ought to purchase cars need feel any hesitancy in doing so? And no railroad with cars that ought to be retired need discern any economic obstacle in doing so?

THIS RELATES TO:

▼

1—Challenging competition

● **2—Holding to high service standards**

3—Increasing internal strength

4—Getting a higher level of earnings

5—Improving tools and methods

● **6—Seeking a friendlier environment**

This paper this past fall heard of any number of instances where shippers had to resort to all kinds of costly expedients to provide themselves with transportation that, in many cases, the railroads just could not provide. It may take quite a time to correct this unhealthy condition completely—but a program which would make it economically justifiable and even profitable for railroads to acquire an adequate supply of suitable cars, and to retire the "jallopies," would show to all knowing shippers that the principal cause for their complaints is on its way toward effective and permanent correction.

Reversing a Vicious Circle

Railroad earnings in the years since the war have certainly been far too low—and go a long way to explain why the railroads are not equipped as well as they ought to be to deal adequately with present traffic. Poor earnings result in substandard service. And substandard service sets up unfriendly attitudes which make it most difficult to get the regulatory and legislative changes needed to improve the earnings—the familiar "vicious circle."

Not all circles are vicious. There is also such a thing as a "benign circle." Railroad service had fallen to a very low ebb after the shop strike of the early twenties—but the industry quickly corrected the condition, with adequate publicity; and the result was that the railroads were never more popular or prosperous than they were in the late twenties. Good service begot good-will, which begot good earnings, which begot ample supplies of new capital, which begot still further improvement.

It can be got going again—by the same methods that started it spinning so happily in 1923 and thereafter. Shouldn't this be the first order of business?

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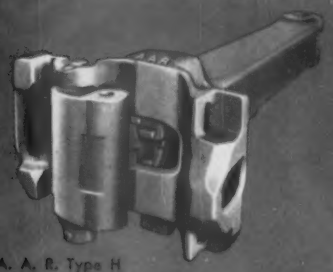
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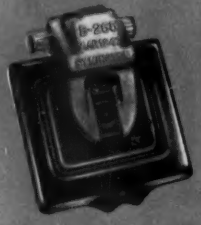
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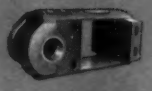
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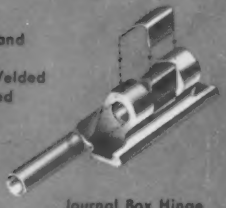
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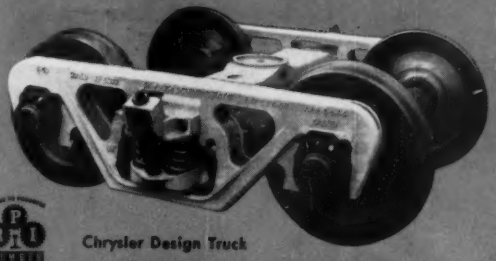
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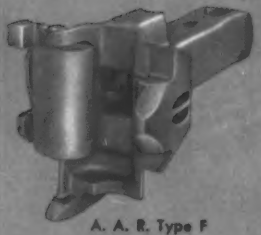
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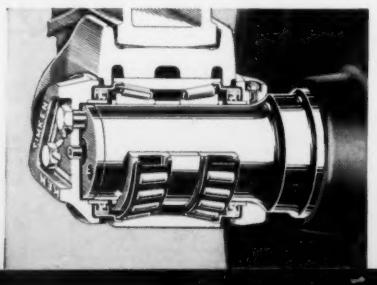

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